A STUDY TO ASSESS THE EFFECTIVENESS OF JACOBSON MUSCLE RELAXATION THERAPY ON PREMENSTRUAL SYNDROME AMONG ADOLESCENT GIRLS IN C.S.I. GIRLS HIGHER SECONDARY SCHOOL AT MADURAI

BY

GAYATHRI .M

A dissertation submitted to the

Tamil Nadu Dr. M. G. R. Medical University, Chennai.

In partial fulfillment of the requirements for the degree of

Master of Science in Obstetrics and Gynecological Nursing

UNDER THE GUIDANCE OF

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1. External:_____ **2. Internal:_____**

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plans to prosper you and not to harm you,
plans to give you hope and a future".
(*Jeremiah 29:11*)

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ABSTRACT

A study to assess the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in C.S.I. Girls Higher Secondary School at Madurai for partial fulfillment of the requirements for the degree of Master of Science in Nursing to the Tamil Nadu Dr. M.G.R. Medical University, Chennai during the year 2018.

Background of the study: Premenstrual syndrome is a condition that affects a woman's emotions, physical health, and behavior during certain days of the menstrual cycle, generally just before the menses. It is a very common condition and it affects up to 85% of menstruating women.

The Objectives of the study are:

1) To assess the pretest and posttest level of premenstrual syndrome among adolescent girls in control and experimental group.

2) To determine the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in experimental group.

3) To find out the association between the level of premenstrual syndrome among adolescent girls with the selected demographic variables in control and experimental group.

The hypotheses of the study are:

H_1: The mean posttest score of premenstrual syndrome is significantly lesser than the mean pretest score of premenstrual syndrome among adolescent girls in experimental group.

H_2: The mean posttest score of premenstrual syndrome is significantly lesser in experimental group than the mean posttest score of premenstrual syndrome among adolescent girls in control group.

H_3: There is a significant association between the level of premenstrual syndrome with the selected demographic variables in control and experimental group

Methods:

Quasi-experimental non-equivalent pretest-posttest control group design was used to collect the data. A total of 60 adolescent girls in C.S.I Girls Higher Secondary School at Madurai were selected as control group (n=30) and experimental group (n=30) through non probability purposive sampling technique by using Premenstrual screening tool. Pretest was done by Modified Premenstrual Syndrome Scale. Jacobson muscle relaxation therapy was given for twenty eight days to the experimental group. Posttest was done on the twenty eighth day by using Modified Premenstrual Syndrome Scale.

Results:

The obtained data was analysed by using descriptive and inferential statistics.

- In control group, pretest mean score is (110 ± SD 15.1) and the posttest mean score is (109.13 ± SD 14.4), the mean difference is 1.1, obtained "t" value is 1.89 and the P value is 0.052 which is not statistically significant.
- In experimental group, pretest pretest mean score is (111 ± SD 20.0) and the posttest mean score is (55.13 ± SD 9.55), the mean difference is 58.86, obtained "t" value is 15. 30 and the P value is <0.001*** which is statistically highly significant.
- In control group posttest mean score is (109.13 ± SD 14.4) and experimental group posttest mean score is (55.13 ± SD 9.55), the mean difference is 54.
- There is a highly significant improvement in the posttest mean score of premenstrual syndrome in experimental group than the control group ["t"= 17.09, P<0.001***].

The present study findings concluded that, Jacobson muscle relaxation therapy is effective in reducing premenstrual syndrome among adolescent girls.

Recommendation:

Jacobson muscle relaxation therapy can be utilized in school setting to alleviate the premenstrual syndrome.

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CHAPTER-I

INTRODUCTION

"Adolescent is a new birth, for the higher and more completely human traits are now born"

- G.Stanley Hall

BACKGROUND OF THE STUDY

Adolescence is a beautiful period of life and generally a healthy one. This is the transitional stage of physical, reproductive and psychological development that generally occurs during the period from the onset of puberty to legal adulthood.

Adolescence is the phase usually between 10-20 years, in which children undergo rapid changes in body images, physiological, psychological and social functioning. (Indian Academic of Pediatrics [IPA], 2016)

Adolescence is the period, which extends from the onset of puberty till the time of sexual maturity is completed. (O.P Ghai, 2000)

This is a period when a person is most vulnerable. The overall growth and developmental changes expose the adolescents to many health risks. Careful and unobtrusive attention to each aspect of health at this stage will help the adolescents to grow as healthy and responsible adults. It is essential to understand the factors that influence the social, physiological and psychological development of adolescents. It helps in effective planning, to survive with many risks that threaten their well-being.

There are 1.2 billion adolescents in the world forming around 18% of the global population. This indicates that roughly one in every six person is an adolescent. Majority of the world's adolescents 88% live in developing countries. (UNICEF, 2011)

In India every fifth person is an adolescent (10-19 years). Nearly 253.2 million adolescents are in the country. In Tamil Nadu, 17.23% (1.24 Cr) population are aged between 10-19 years (Censusindia.gov.in -2011). But, there is very little research on adolescent social, physiological and psychological development.

Menarche is the first menstrual cycle, or first menstrual bleeding, in female humans. From both social and medical perspectives, it is often considered the central event of puberty, as it signals the possibility of fertility. Girls experience menarche at different ages. The mean age of menarche has declined over the last century, but the magnitude of the decline and the factors responsible remain subjects of contention.

According to WHO the mean age of menarche is typically between 12-13 years. The worldwide average age of menarche is very difficult to estimate accurately. It varies significantly by geographical region, race, ethnicity and other characteristics. Various estimates have placed it at 13 years. Some estimates suggest that the worldwide median age of menarche is 14 years. The average age of menarche is about 12.5 years in the United States, 12.72 in Canada, 12.9 in the UK, 13.5 in Srilanka 12.38 in China and 13.76 in India.

Menstruation is a normal physiological impact in each girls life. Menstruation is a monthly uterine bleeding usually for 3-5 days after every 28 days from puberty till menopause. Menstrual cycle and periods are controlled by hormones like estrogen and progesterone. A change in mood, behavior, appearance of some abnormal vague symptoms is often noticed in second half of the cycle. If the symptoms are severe enough to disturb lifecycle of a women or required medical help, it is called premenstrual syndrome.

Most common health concerns among adolescent girls in our country are under nutrition and anemia. As per the National Family Health Survey (NFHS-3)

data, one third of the adolescent girls in India are underweight and 56% are anemic. Poor nutrition, worm infestations and menstrual abnormalities, both menorrhagia and polymenorrhoea, are the commonest problem among adolescent girls in India.

Menstrual problems are very common during adolescence due to slow maturation of the system situated in the brain called hypothalamo-pituitary axis. The hypothalamo-pituitary axis is the mediator of the menstrual cycle. The failure of this system may lead to variations in the menstrual cycle. More than two-third of adolescent problems are related to menstruation in the forms such as dysmenorrhea, amenorrhea or oligomenorrhoea, menorrhea and premenstrual syndrome.

Dysmenorrhea is one of the common gynecological complaint during adolescence. About 60% of girls in the age of 12-17 years complaint dysmenorrhea. Many girls have abdominal cramps during the first few days of their periods. They are caused by prostaglandin, a chemical in the body that makes the smooth muscle in the uterus to contract. Irregular period is one of the commonest problem among adolescent girls. A girl's body usually does not develop a regular cycle until 2 to 3 years after she begins her periods. Regular menstrual cycle time limit is varies from girl to girl. The typical cycle of a female is 28 days and others are as long as 38. Changing hormone levels might affect the length of a period. Abnormal uterine bleeding (AUB) is when periods are very heavy, last much longer than normal, or don't come regularly. This heavy or prolonged bleeding may keep a girl away from school or social functions.

Before the onset of the menses, females face many uncomfortable symptoms which last for a short period, stretching from few hours to few days. But some of them can be very intense and can disturb the normal functioning of the person. These symptoms are grouped as premenstrual syndrome.

Premenstrual syndrome is a combination of emotional, physical, psychological, and mood disturbances that occur after a women's ovulation, typically ending with the onset of her menstrual flow. Premenstrual syndrome is the primary reason for women to get away from school or college.

About 90% of women experience premenstrual symptoms at some point of their lifetime. The duration of premenstrual syndrome varies among women. Most women experience the symptoms for a few to several days in the week prior to the onset of their menstrual period. Some women may have symptoms for a shorter or longer time period, but symptoms of premenstrual syndrome typically start after ovulation (The midpoint in the monthly menstrual cycle).

The exact cause of premenstrual syndrome is unknown, but is thought to result from fluctuations in the levels of progesterone and estrogen, hypoglycemia, hyperprolactinemia, psychogenic factors, changes in carbohydrate metabolism, excessive aldosterone, and progesterone allergy and water retention by kidneys.

Interaction between the change of sex hormone levels during the luteal phase of the menstrual cycle and neurotransmitters in the brain, particularly the neurotransmitter serotonin, in susceptible women. During luteal phase, hormones from the ovary cause the lining of the uterus to grow thick and spongy. At the same time, an egg is released from the ovary. At this time, the level of a hormone called progesterone increases in the body, while the level of another hormone, estrogen, begins to decrease. The shift from estrogen to progesterone causes premenstrual syndrome.

While hormone levels are generally normal in women with premenstrual syndrome, the individual's response to the hormones and their levels may be different or abnormal.

Hormonal cycling affects the level of serotonin, a brain chemical that regulates many functions, including mood and sensitivity to pain. Compared to women who do not have premenstrual syndrome, some women who experience premenstrual syndrome have lower levels of serotonin in their brain prior to their periods. (Low serotonin levels are commonly associated with depression).

There are many premenstrual syndrome symptoms which can be broadly classified as physical, mental, emotional, and social development.

Physical symptoms include head ache, heart palpitation, fatigue, dizziness, abdominal bloating, breast tenderness, constipation or diarrhea, menstrual cramps, hot flush, dry skin, acne, hair loss, weight gain, fluid retention, nausea and vomiting, appetite change, fatigue and muscle aches.

Psychological symptoms include anxiety, nervousness, mood swings, irritability, depression, forgetfulness, confusion, hostility, sleep pattern disturbance, easy crying and sensitivity to noise.

Behavioral symptoms include, obsessional thought, lack of self control, feeling guilt, irrational thought, poor judgment, being over sensitive, restlessness, compulsive behavior and clumsiness.

There are no lab tests that can confirm a diagnosis of premenstrual syndrome. The health care professionals could talk with the client about her symptoms which occur each month. The health care practitioner may ask the client to keep accurate records or diary of symptoms throughout the next month or two. These records give the women and health care professional a better understanding of the symptoms and how they relate to the women's menstrual cycle. It is the responsibility of nurses, nursing educators, teachers, and parents to make an awareness regarding premenstrual syndrome.

Various treatments and complimentary therapies are available for premenstrual syndrome. Acupressure is an ancient Chinese technique involves the use of finger pressure on specific points along the body. Acupressure stimulation removes energy blockage by diffusing the toxic build up that accumulates in the muscle tissue. A practitioner of acupuncture inserts sterilized stainless steel needles into the skin at specific points of the body. Some women experience symptoms relief after acupuncture treatment.

Using of herbs, such as ginkgo, ginger, chaste berry and evening primrose oil are effective for relief of Premenstrual syndrome. Limit salt intake especially in the week before period, helps to reduce fluid retention, abdominal bloating, and swelling especially in the feet and hands and limit caffeine intake can help to reduce breast tenderness and headache. An adequate vitamin and mineral intake may also help with Premenstrual syndrome.

Selective serotonin reuptake inhibitor (SSRI) drugs such as sertralin, fluxetine help in releving the premenstrual syndrome especially in the week before period Anti-inflammatory drugs such as ibuprofen prevent the body from producing prostaglandins, which have been suggested as a cause of Premenstrual syndrome. NSAID's (Paracetamol is the commonly used drug) are recommended initially to treat the premenstrual syndrome.

Mind-body relaxation techniques such as progressive muscle relaxation, deep breathing, meditation, yoga, foot reflexology, aerobic exercise, listening music, warm bath and progressive muscle relaxation exercise will help to reduce the premenstrual syndrome.

Various complementary and alternative therapies are available for treating Premenstrual syndrome but, Jacobson muscle relaxation technique is one of the best and quick effective methods to reduce the level of premenstrual syndrome.

Edmund Jacobson, an American physician, drew on studies in psychology and physiology, to develop his own understanding of the mind – body relationship and its role in health and a method of stress reduction which was described in his book 'Progressive Relaxation', published in 1938. He stated that the mind and voluntary muscles work together in an integrated way.

It is a systematic technique that follows a simple mechanism of tensing the muscle and then relieving the stress, to provide relaxation to the muscles. Keeping the mind calm allows muscles to relax and freeing the body from tension reduces sympathetic activity and anxiety. Bernstein and Borkovec later developed a shortened, modified procedure that is now the most frequently used form of progressive muscle relaxation technique.

Jacobson muscle relaxation technique is based on a theory that a psychobiological state called neuromuscular hypertension is the basis for a variety of negative emotional states , psychosomatic diseases and that the body's muscle tension develops from anxiety-provoking thoughts and events. The cognitive and physiological pathways involved in negative emotional states are complex and the extent to which learning to relax muscles is an effective way to overcome self reported tension in anxiety disorders. Although the exact mechanism of action is unclear, muscle relaxation techniques are reported to be effective in decreasing muscle tension in the body.

This technique is based on the idea that our mental and emotional states affect levels of muscular response. This technique illustrates the relationship between the

muscles, thinking and emotions. The essence of the technique consists of tensing certain parts of the body and then gradually relaxing them. Paying attention to the sensations of tension followed by relaxation helps a person experience a pleasant sense of well – being which carries over into their emotional and mental state.

Jacobson muscle relaxation technique involves the sequential testing and releasing of major skeletal muscle groups with the aim of inducing relaxation. PMR sessions commonly last for 20 - 30 minutes, including deep breathing techniques. There are different muscle groups in the body. The Jacobson muscle relaxation therapy is practiced on each of these muscle groups.

Jacobson muscle relaxation is a two-step relaxation therapy or method.

Step 1 : Putting tension on the muscles. First give tension to the muscle group, squeeze the muscle as hard as we can, so that we can really feel the tension in our muscles. Continue squeezing for about 5 seconds or a little more, so that there is a little discomfort in the muscles tightly either by stretching or by twisting or by making a tight fist, depending on the position.

Step 2 : Relaxing the tensed muscles group. The tensed muscles are slowly released from the tension state. The tightness would slowly flow out through the tensed muscles. It is very important to notice and experience the relaxation process as the stress or tension is relieved off. The very basic purpose of the whole exercise is to experience the relaxation. It is important to notice the difference between ‘before’ and ‘after’ state of the tense muscle will increase the comfort. Wait for about 10-15 seconds as the tension is released and then repeat the process on another muscle group.

Jacobson muscle relaxation is one of the best methods to relieve premenstrual syndrome caused physical, psychological and social symptoms.

NEED FOR THE STUDY

Premenstrual syndrome is a growing concern for health care providers. The physical, psychological, and behavioral manifestations of the syndrome may impair interpersonal relationships, academic performance and family functioning. Premenstrual syndrome should be regarded not only from the women's perspective but also with respect to the entire family.

One of the most important challenges to researchers, clinicians, and the women with whom they work in classification of women's experience in a way that is accurate and foundational to study of etiology and efficacious treatment. Because nearly 300 different symptoms have been associated with menstrual cyclicity, classification is not an insignificant problem.

Over the past two decades, nurses have studied the classification and measurement of premenstrual symptoms and syndromes. Another feature of nursing research about the menstrual cycle is the attempts of investigators to study menstrual phenomena in the context of everyday life. Locating the problem of symptoms within the women herself, rather than acknowledging the simultaneous influences of women's social experiences.

In many countries, the concept of a transitional period between childhood and adulthood is relatively new. During this period, known as adolescence, individuals move toward physical and psychological maturity, economic independence, and acquire their adult identity.

The period of adolescence for girl is a period of physical and psychological preparation for safe motherhood. As the direct reproducers of future generations, the health of adolescent girls influences not only their own health, but also the health of the future population. Almost a quarter of India's population comprises of girls below

20 years. One of the major physiological changes that take place in adolescent girl is the onset of menarche, which is often associated with the problems of irregular menstruation, excessive bleeding and dysmenorrhea. Of these, dysmenorrhea and Premenstrual syndrome are the common problems experienced by many adolescent girls.

Kourosh Sayehmiri, et al. (2014), conducted a systemic review and meta-analysis regarding worldwide prevalence of premenstrual syndrome. 17 articles were selected and the data were analysed by meta-analysis method. Total 18,803 individuals were participants in the studies. The study evaluated the prevalence of premenstrual syndrome in world wide. Based on the results, the pooled prevalence of premenstrual syndrome was 47.8%. The lowest and highest prevalence were reported in France 12% and in Iran as 98% respectively. The prevalence percentage in some other countries is as follows: turkey 79%, Brazil 60%, Nigeria 85%, Pakistan 53%, Turkey 79%, United Arab Emirates 16.8%, Switzerland 19%, Spain 73%, Thailand 16.8%, China 21%, and India 67%. Finally the researchers concluded that the global prevalence of premenstrual syndrome is high and half of women in reproductive age group experienced Premenstrual syndrome.

Fadia Hussein, et al., (2014), conducted, a study regarding the assessment of adolescent student's knowledge toward Premenstrual syndrome in nursing secondary schools at Al-Diwanyia Governorate. The result revealed that majority of the study sample (44.6%) had insufficient knowledge toward premenstrual syndrome. The study recommended develop school health services for better detection and management of Premenstrual syndrome in the adolescent population.

Mary Tadakawa et al. (2016), conducted a study to assess the prevalence and risk factors of school absenteeism due to premenstrual disorders in Japanese high

school students. A total of 901 girls between 15-19 years with regular menstrual cycles were assessed using the self reporting premenstrual symptoms questionnaire (PSQ). The result revealed that, 89(9.9%) participants were classified as having moderate-to-severe Premenstrual syndrome and 28(3.1%) had Pre Menstrual Dysphoric Disorder (PMDD). More than half of the participants had anxiety or tension 66.7%, anger or irritability 64%, difficulty in concentrating 59.5%, fatigue or lack of energy 70.9%, over eating or food cravings 52.8%, and physical symptoms reported by 60.9% participants. Premenstrual symptoms impaired the work efficiency or productivity, home responsibility in 50.7%, social life activities 23.3% and relationships with coworkers or family 24.0%. Finally the researchers concluded that one in nine Japanese female high school students were absent for school due to premenstrual symptoms. Premenstrual symptoms and life styles, such as preference for salty food and lack of regular exercise, were identified as risk factors for school absenteeism.

Reproductive community surveys in India estimate that 30%-90% of women have suffered from premenstrual syndrome. Premenstrual syndrome is characterized by a spectrum of physical and mood symptoms, which appear during the week before menstruation and usually resolve within a week after the onset of menses. Most women in their reproductive years experience some premenstrual symptoms. Thus, the management of Premenstrual syndrome is important for women's health. However, there is a considerable debate regarding the nature and extent of Premenstrual syndrome symptoms. Non pharmacological interventions such as cognitive therapy, acupressure, reflexology, progressive muscle relaxation therapy and massage therapy result in effective Premenstrual syndrome control.

Buddhabunyakan et al. (2015), conducted a study to assess the prevalence of Premenstrual syndrome in Thailand high school students. Out of the 399 participants, 289(72.4%) completed the self-reported questionnaire. 86 participants (29.8%) reported Premenstrual syndrome. The most common somatic symptoms among participants with premenstrual syndrome were breast tenderness 74.4%, head ache 70.9%, abdominal bloating 46.5%. The most common affective symptoms were angry outbursts 97.7%, anxiety 73.3%, and irritability 68.6%. There were significant differences between the premenstrual syndrome and non Premenstrual syndrome groups. premenstrual syndrome was associated with various problems related to academic activities, including lack of concentration and motivation, poor individual performance, poor collaborative work performance, and low academic scores.

Tibin Joshoph et al (2015) conducted a study on prevalence of premenstrual syndrome among adolescent girls in Aswini College of Nursing, Thrissur. The results showed that, out of 60 samples, 10% had Premenstrual syndrome, 75% had mild Premenstrual syndrome, 15% had moderate Premenstrual syndrome and no one is had severe Premenstrual syndrome. Common symptoms associated with Premenstrual syndrome are, 73% were experiencing back ache, 65% had tiredness and 60% had irritability, 48% had tension, 42% had mood swings, 22% suffered from muscle stiffness, 20% had sleeping problems and 18% had dizziness, painful breast, nausea or vomiting and feeling of suffocation.

Shruti Brahmbhatt, et al (2013), conducted a prospective survey study in India among 50 young and 50 middle aged women to find out the prevalence of premenstrual syndrome with an emphasis on its management. It was found that 42% faced premenstrual syndrome regularly, while 58% occasionally. Out of 100 participants 68% suffered with backache, 64% had leg cramps, 62% had fatigue,

anger and breast tenderness, 58% suffered with anxiety and generalized body ache. Of all the sufferers, only 34% had received the treatment for premenstrual syndrome. Finally the researchers concluded that irrespective of the age, premenstrual syndrome is a common problem faced by women.

Chetna Malhotra, et al (2010) conducted a study on the frequency of problems related to menstruation in adolescent girls and the effect of these problems on daily routine stated that, more than one third (35.9%) of the study subjects were in the age group of 13-15 years followed by 17-19 years, and 15-17 years respectively. Mean age of study participants were 16.2 years. Dysmenorrhea (67.2%) was the commonest problem and (63.1%) had one or the other symptoms of premenstrual syndrome. Daily routine of (60%) girls were affected due to prolonged bed rest, missed social activities/commitments, and disturbed sleep. (17.24%) had to miss a class and (25%) had to abstain from work. It is a need to emphasize on designing menstrual health programs for adolescent

Padmavati et, al (2014) conducted a study on the prevalence of premenstrual syndrome among adolescent girls in a selected school at Erode. The findings revealed that out of 200 samples (62%) of the adolescent girls were in the age group of 15-16 years. (54%) of the samples had mild Premenstrual syndrome, (28%) samples had moderate and (18%) of them had severe Premenstrual syndrome. (73%) of the adolescent girls attained menarche at the age of above 13 years, (64%) of adolescent girls were in >28 days cycle, (63%) girls had 5-7 days menstrual flow, (56%) of them had family history of premenstrual syndrome, (42%) of the adolescent girls had low academic performance (54%) of adolescent girls were school absenteeism.

Even though many complimentary therapies are available for premenstrual syndrome, they are not in practice properly. Jacobson muscle relaxation therapy is the best method to provide quick impact on premenstrual syndrome.

Fatemeh Kimiyaee Asadi et al. (2016), conducted a study to assess the effect of muscle relaxation therapy on premenstrual syndrome among adolescent girls at Islamic Azad University, Hamedan, Iran. 80 subjects were categorized into control group (40), and experimental group (40). Experimental group received one hour session of intervention per week for 6 months and the control group did not receive intervention. The result shows that, compared to the control group, experimental group premenstrual syndrome was reduced. Muscle relaxation method reduce Premenstrual syndrome ($p<0.001$). Finally the researchers concluded that, muscle relaxation therapy was significantly effective in reducing premenstrual syndrome.

M.Sudhadevi, et al (2016), conducted a study to find out the effectiveness of Jacobson's Progressive Muscle Relaxation Exercises on Premenstrual syndrome among students at selected school in Erode. Study findings revealed that the level of premenstrual syndrome during pretest was mild among 46.7%, moderate among 50% and severe among 3.3%, whereas in the posttest the level of premenstrual syndrome was mild among 96.7% and moderate among 3.3%. The result of the study shows that practice of Jacobson's progressive muscle relaxation exercise was found to be effective in reducing premenstrual syndrome.

The researcher had a chance to go for regular school health programme in C.S.I Girls Higher Secondary School at Madurai. The researcher found that many girls have the complaints of premenstrual syndrome and they don't know how to overcome the same. Though there are number of muscle relaxation and stress relieving techniques are very useful, the Jacobson muscle relaxation therapy is a fast

and effective method that has number of benefits towards Premenstrual syndrome. So the researcher would like to identify the effect of Jacobson muscle relaxation therapy on premenstrual syndrome. So the researcher has chosen this study.

STATEMENT OF THE PROBLEM

"A study to assess the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in C.S.I. Girls Higher Secondary School at Madurai."

OBJECTIVES

1. To assess the pretest and posttest level of premenstrual syndrome among adolescent girls in control and experimental group.
2. To determine the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in experimental group.
3. To find out the association between the level of premenstrual syndrome among adolescent girls with the selected demographic variables in control and experimental group.

HYPOTHESES

H_1: The mean posttest score of premenstrual syndrome is significantly lesser than the mean pretest score of premenstrual syndrome among adolescent girls in experimental group.

H_2: The mean posttest score of premenstrual syndrome is significantly lesser in experimental group than the mean posttest score of premenstrual syndrome among adolescent girls in control group.

H_3: There is a significant association between the level of premenstrual syndrome with the selected demographic variables in control and experimental group.

OPERATIONAL DEFINITION

ASSESS

It refers to the systematic collection, review, and use of information for the purpose of research.

In this study, it refers to assessing the level of Premenstrual syndrome among adolescent girls.

EFFECTIVENESS

It refers to the capability of producing a desired result or the ability to produce desired output. When something is deemed effective, it means it has an intended or expected outcome, or produces a deep vivid impression.

In this study, effectiveness refers to the outcome of Jacobson muscle relaxation therapy, which was measured by Modified Pre Menstrual Syndrome Scale.

JACOBSON MUSCLE RELAXATION THERAPY

It refers to a relaxation technique that involves the sequential tensing and releasing of major skeletal muscle group with the aim of inducing relaxation.

In this study, Jacobson muscle relaxation therapy refers to systematic contraction and relaxation of the muscles in sequence as forehead, eyes, cheeks, mouth, lips, ears, neck, right and left upper arms, elbows, wrist, fingers, chest, back, abdomen, thighs, cuff muscles, ankles, feet, sole and toes.

PREMENSTRUAL SYNDROME

It refers to a combination of physical and mood disturbances that occur one or two weeks before the menstrual period.

In this study, premenstrual syndrome refers to physical, psychological, behavioral and psycho-social symptoms that occur before the menstrual period with in 1-3 days or 4-6 days or 7-10 days or more than 10 days.

ADOLESCENT GIRLS

It refers to the girls between the age group between 12-19 years.

In this study, adolescent girls refers to the girls who attained menarche and studying in 7^{th}, 8^{th}, 9^{th} standard at C.S.I Girls Higher Secondary School , between the age group of 12-14 years.

ASSUMPTIONS

- Majority of the adolescent girls who attained menarche have premenstrual syndrome.
- It is possible to relieve the premenstrual syndrome by Jacobson muscle relaxation therapy.

DELIMITATIONS

The study is delimited to

- Adolescent girls between the age group of 12-14 years.
- Data collection period is limited to 6 weeks only.
- Samples are only the school children.

PROJECTED OUTCOME

The findings highlight and strengthen the already tested theoretical literature. The majority of the adolescent girls are affected by the premenstrual syndrome. The health professionals can teach the adolescent girls about the effect of Jacobson relaxation technique on premenstrual syndrome.

CHAPTER - II

REVIEW OF LITERATURE

A Literature Review is “a systematic, explicit, and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners.”

A literature review survey books, scholarly articles, and any other sources relevant to a particular issue, area of research, or theory and provides a description, summary, and critical evaluation of these works in relation to the research problem being investigated.

Literature reviews are designed to provide an overview of sources that have explored while researching a particular topic and to demonstrate to their readers how their research fits within a larger field of study.

The researcher did a comprehensive review of the research and non-research literature related to the present study to expand the understanding and gain insight into the selected problem. The attempt was made through textbooks, Medline, Pub med, Journal review, Google and Encyclopedia in order to widen the understanding of the research problem and methodology of the study. It helped to develop the instruments and select variables to be included in this study.

Literature relevant review done for the present study is mentioned under the following headings

- Studies related to the prevalence of premenstrual syndrome among adolescent girls.
- Studies related to Jacobson muscle relaxation therapy on premenstrual syndrome.

Studies related to the prevalence of premenstrual syndrome among adolescent girls

Rabbia Ashfaq et al. (2017) conducted a study regarding association between the prevalence of premenstrual syndrome and weight status of adolescent girls. samples were 150 unmarried adolescent girl aged between11-21 years. The result concluded that more than half (78.7%) of the adolescents suffered from premenstrual syndrome. BMI standards found that most of the subjects were underweight (39.3%). Chi square test results showed that there is a significant association (P>0.05) between variables. The prevalence of Premenstrual syndrome is high in overweight adolescents (94.1%) and low in healthy weight adolescents (64%) as compared to underweight (81.4%) and obese adolescents (91.7%).

Abirami P, et al. (2017) conducted a study to assess the prevalence of premenstrual syndrome among adolescent girls at SRM College of Nursing, SRM University Kattankulathur. The study concluded that out of 100 adolescent girls, 26(26%) had mild level of Premenstrual syndrome, 55(55%) had moderate level of Premenstrual syndrome, and 19(19%) had severe level of Premenstrual syndrome and there was no significant association between the demographic variables such as age, religion, place of residence, socio-economic status, height, weight, age at menarche, menstrual flow, and regular exercise with the level of Premenstrual syndrome.

Mary Tadakawa et al. (2016), conducted a study to assess the prevalence and risk factors of school absenteeism due to premenstrual disorders in Japanese high school students. A total of 901 girls between 15-19 years with regular menstrual cycles were assessed using the self reporting premenstrual symptoms questionnaire (PSQ). The result revealed that, 89(9.9%) participants were classified as having moderate-to-severe Premenstrual syndrome and 28(3.1%) had Pre Menstrual

Dysphoric Disorder (PMDD). More than half of the participants had anxiety or tension 66.7%, anger or irritability 64%, difficulty in concentration 59.5%, fatigue or lack of energy 70.9%, over eating or food cravings 52.8%, and physical symptoms reported by 60.9% participants. Premenstrual symptoms impaired the work efficiency or productivity, home responsibility in 50.7%, social life activities in 23.3% and relationships with co-workers or family in 24.0%. Finally the researchers concluded that one in nine Japanese female high school students were absent for school due to premenstrual symptoms. Premenstrual symptoms and life styles, such as preference for salty food and lack of regular exercise were identified as risk factors for school absenteeism.

Nagashekhara Molugulu et al. (2016) conducted a study on the prevalence of premenstrual syndrome among future healthcare professionals in Master Skill Global College, Kuala Lumpur, Malaysia. The results of the study showed that out of 300, samples 110 (37%) diagnosed with premenstrual syndrome among them 67 (22%) had mild Premenstrual syndrome, 27 (9%) had moderate Premenstrual syndrome 16 (5.3%) had severe Premenstrual syndrome and 21 (7%) samples were diagnosed with Premenstrual Dysphoric Disorder (PMDD). The study finding suggested the association of premenstrual syndrome severity with younger age group, stress, academic performance and sleeping problem. Out of 300 respondents, 114 (38%) were unaware of the somatic or physical symptoms, 102 (34%) samples were unaware of psychological premenstrual symptoms, 97(32.3%) samples were unaware of premenstrual behavioral symptoms and 65 (21.7%) were unaware either the premenstrual symptoms interfered with their daily life or not.

Fatma Ali Oraby, et al. (2016), conducted a study on reproductive and demographic predictors of premenstrual syndrome severity among university students

in Egypt. 250 samples aged between 18-25 years were selected for the study. The mean age of menarche was 13.15±1.148. Nearly half (47.4%) of the study sample had severe premenstrual syndrome. 54.8% of the study sample had family history of premenstrual syndrome. The study findings revealed that mother's level of education, family history of premenstrual syndrome, menstrual cycle intervals were the important predictors that might affect the severity of premenstrual syndrome. The results indicated that, menstrual irregularities, BMI and duration of menstrual flow were not statistically significant in relation to the severity of premenstrual syndrome.

Fatemeh Kimiyaee Asadi, et al. (2016), conducted a study on the effect of relaxation and positive self-talk on symptoms of premenstrual syndrome in Hamadan, West Iran. 80 participants with premenstrual syndrome disorder were randomly divided into four groups. The first and second groups underwent positive self-talk and relaxation, respectively. The third group experienced positive self- talk and relaxation at the same time. The fourth group did not receive any treatment. The treatment was given for 8 sessions and the duration of each session was one hour. The results showed that compared to the control group, relaxation (23.2%) and positive self-talk (21.5%) treatment methods alone can reduce premenstrual syndrome. A combined (relaxation + positive self- talk) was more effective in reducing premenstrual syndrome compared to relaxation or positive self-talk alone.

Ranjana Mandal et al. (2015), conducted a study on premenstrual syndrome among adolescent girl students in an urban area of West Bengal. It was a cross-sectional descriptive study. Data were collected from the students of class IX to XII using pre-tested pre-designed self-administered questionnaire. Total 278 students were included. The mean age of the students was 15.61 years ± 1.3 years. 54% of girls reported to have premenstrual syndrome. According to American College of

Obstetrician and Gynecologist (ACOG), the criteria for depression was 45.7%, anger 61.2%, irritability 88.1%, anxiety 51.8%, confusion 46.4%, rejection 24.8%, breast pain 22.7%, abdominal distension 37.5%, head ache 40.6% and swelling of the limbs 5% of the samples.

Buddhabunyakan et al. (2015), conducted a study to assess the prevalence of premenstrual syndrome in Thailand high school students. Out of the 399 participants, 289(72.4%) completed the self-reported questionnaire. 86 participants (29.8%) reported premenstrual syndrome. The most common somatic symptoms among participants with premenstrual syndrome were breast tenderness 74.4%, head ache 70.9%, abdominal bloating 46.5%. The most common affective symptoms were angry outbursts 97.7%, anxiety 73.3%, and irritability 68.6%. There were significant differences between the premenstrual syndrome and non premenstrual syndrome groups. Premenstrual syndrome was associated with various problems related to academic activities, including lack of concentration and motivation, poor individual performance, poor collaborative work performance, and low academic scores.

Tibin Joshoph et al. (2015), conducted a study on prevalence of premenstrual syndrome among adolescent girls in Aswini College of Nursing, Thrissur. The results showed that, out of 60 samples, 10% had premenstrual syndrome, 75% had mild level of premenstrual syndrome, 15% had moderate level of premenstrual syndrome and no one had severe level of premenstrual syndrome. Common symptoms associated with premenstrual syndrome are, back ache 73%, tiredness 65%, irritability 65%, tension 48%, mood swings 42%, muscle stiffness 22%, sleeping problems 20% and dizziness, painful breast, nausea or vomiting and feeling of suffocation 18%.

Aditya Prasad Sharkar, et al (2014), conducted a study to identify the premenstrual syndrome problems among adolescent girls in a rural school of West

Bengal, India. The result revealed that, premenstrual syndrome was reported by 61.5% of girls. Based on the American College of Obstetrician and Gynecologist (ACOG) criteria, 62.7% girls reported depression, 70.5% girls reported anger and 84.8% reported irritability. Anxiety and confusion were reported by 70.0% and 66.8% adolescent girls, respectively. Around one-third of girls experienced breast pain, and 53.3% girls faced social rejection during that period. Head ache and abdominal distention were reported by around 55% girls. Only 14.7% of them reported limb swelling premenstrual period. Premenstrual syndrome was found to be associated with mother's occupation, amount of blood flow during menstruation.

Kourosh Sayehmiri, et al. (2014), conducted a systemic review and meta-analysis regarding worldwide prevalence of premenstrual syndrome. 17 articles were selected and the data were analyzed by meta-analysis method. Total 18,803 individuals were participants in the studies. The study evaluated the worldwide prevalence of premenstrual syndrome. Based on the results, the pooled prevalence of premenstrual syndrome was 47.8%. The lowest and highest prevalence were reported in France 12% and Iran 98% respectively. The prevalence percentage in some other countries are Turkey 79%, Brazil 60%, Nigeria 85%, Pakistan 53%, United Arab Emirates 16.8%, Switzerland 19%, Spain 73%, Thailand 16.8%, China 21%, and India 67%. Finally the researchers concluded that the global prevalence of premenstrual syndrome is high and half of women in reproductive age group experienced premenstrual syndrome.

Shruti Brahmbhatt, et al. (2013), conducted a prospective survey in India among 50 young and 50 middle aged women to find out the problems of premenstrual syndrome with an emphasis on its management. It was found that 42% faced premenstrual syndrome regularly, while 58% occasionally. Out of 100 participants,

68% suffered with backache, 64% had leg cramps, 62% had fatigue, anger and breast tenderness and 58% suffered with anxiety and generalized body ache. Of all the sufferers only 34% had received the treatment for premenstrual syndrome. Finally the researchers concluded that irrespective of the age premenstrual syndrome is a common problem faced by women.

Zehra Siwat, et al. (2013), conducted a study on prevalence of premenstrual symptoms among university students in Karachi, Pakistan. Among 520 subjects, 208 were grouped as control and 312 were grouped as experimental group. The symptoms included irritability 71.05%, fatigue 86.84%, constipation 36.76%, loose bowel 17.65%, appetite up 42.65% and appetite down 51.47%, breast tenderness 67.65%, abdominal bloating 47.06%, aggressiveness 29.41%, depression 13.24%, insomnia 14.71%, labile mood 5.88%, and anger 7.35%. Elevated irritability and breast tenderness were observed between the age group of 19-24 years.

Chetna Malhotra, et al. (2010) conducted a study on the frequency of problems related to menstruation in adolescent girls and the effect on daily routine. More than one third (35.9%) of the study subjects was in the age group of 13-15 years followed by 17-19 years, and 15-17 years respectively. Mean age of study participants were 16.2 years. Dysmenorrhea (67.2%) was the commonest problem and (63.1%) had one or the other symptoms of premenstrual syndrome (premenstrual syndrome). Daily routine of (60%) were affected due to prolonged bed rest, missed social activities/commitments, and disturbed sleep. (17.24%) were absent for the class and 25% were abstained from work. The result revealed the need to emphasize on designing menstrual health programs for adolescents.

Pragya Sharma, et al. (2010), conducted a study to assess the problems related to menstrual cycle among adolescent girls in New Delhi. The result revealed that 92%

had drowsiness, 90% had irritability, 68% had low noise tolerance, 68% had anxiety and 85% had decreased libido. The most prevalent somatic symptoms were abdominal distension, seborrhea, head ache, vomiting, cardiac arrhythmias and dizziness.

Fawole AO, et al. (2009), conducted a study on menstrual characteristics among secondary school girls in Ibadan, Nigeria. The result showed that, most of the samples were between the age group of 9 to 23 years. Majority of respondents 768 (63.3%) experienced normal cycle length, 391 (32.2%) had short cycles and 55 (4.5%) had lengthy cycle greater than 35 days. Prevalence of normal cycles increased with increasing age, 72.7% experienced dysmenorrhea and severe dysmenorrhea was reported by 12.7%. 57.3% had symptoms of pre-menstrual syndrome. Finally the researchers concluded that cycle length was not associated with presence of dysmenorrhoea and prevalence of menstrual abnormalities.

Ziba Taghizadeh et al. (2008) conducted a study to assess the effect of premenstrual syndrome on quality of life in adolescent girls. Adolescent girls aged 15-17 years (180 in each group) were participated. The samples were studying in the second year of high school in south of Tehran. The results revealed that 62.22% adolescent girls had moderate premenstrual syndrome, 8.89% had mild premenstrual syndrome and 28.89% had severe premenstrual syndrome. The mean scores in all the component of SF -36 (36- item Short Form Health Survey) in the premenstrual syndrome group was significantly lower than the healthy group. Finally the researcher concluded that premenstrual syndrome has great burden on different dimensions of quality of life in adolescent girls.

Amitha Sing, et al. (2008), conducted a study on prevalence and severity of dysmenorrhea among first and second year female medical students in Rewa. The mean age of subjects at menarche was 12.5 (± 1.52) years, with a range of 10-15

years. The prevalence of dysmenorrhea was 73.83%, approximately 4.67% of subjects had severe dysmenorrhea. The average duration between two periods and the duration of menstrual flow was 28.34% (± 2.45) days respectively, prevalence of other menstrual disorders like irregularity, prolonged menstrual bleeding, heavy menstrual bleeding and PCOD were 7.47%, 10.28%, 23.36% and 3.73% respectively. Premenstrual symptoms were the second most (60.50%) prevalent disorder and 67.08% reported social withdrawal. Dysmenorrhea and premenstrual syndrome were highly prevalent among female medical students, It was related to college/class absenteeism, limitations on social, academic, sports and daily activities.

Nusrat Nisar et al. (2008) conducted a study to determine the frequency, intensity and impact of premenstrual syndrome among medical college students in Isra University Hospital, Hyderabad. Study participants (n=172) had mean age of 21.2±1.9 years. 89 (51%) girls met the ICD - 10 criteria for premenstrual syndrome. Among them, 53 (59.5%) had mild premenstrual syndrome, 26 (29.2%) had moderate and 10 (11.2%) had severe premenstrual syndrome and 10 (5.8%) girls were found to have premenstrual dysphoric disorder. The order of frequency of symptoms were anger, irritability, anxiety, tiredness, difficult in concentration, mood swings and physical symptoms like breast tenderness and general body discomfort with great impairment in social life/ activities, work efficiency and productivity. Finally the researchers concluded that frequency and morbidity of premenstrual syndrome/PMDD is relatively common in young girls and it adversely affects the educational, social, and emotional well-being.

Navdeep Kaur, et al. (2008), conducted a descriptive study to assess the premenstrual syndrome and coping behavior among nursing students, PGIMER, Chandigarh. The result revealed that, out of 248 students, majority of the students

221(89.11%) had menarche at 12-15 years of age, 163(65.72%) had 28-30 days menstrual cycle interval, 186(75%) had 4-5 of days menstrual cycle. Majority 197(79.43%) students were reported of pain in lower abdomen, 164(66.1%) had back ache, 160(64.5%) had irritability, 147(59.2%) had fluctuation of mood, 129(52.0%) had lower efficiency of work performance, 126(50.8%) had restlessness, 113(45.6%) had pain in thighs, 106(42.7%) had distraction from work, 105(42.3%) had breast tenderness, 104(41.9%) had difficulty in concentration, 104(41.9%) had body ache and 95(38.3%) reported to avoid social activity. Majority of the students were using healthy coping strategies. 221(89%) were not blamed themselves for this problem, 187(75.40%) were accepted it in a healthy way that nothing can be done, 181 (72.98%) took hot or cold drinks, 178(71.77%) samples did not express their anger on others. Majority of the students accept the premenstrual syndrome as a natural process and nothing can be done to cope up in a healthy way.

Kwan et al. (2007) conducted a study on impact of premenstrual syndrome among reproductive women. The result revealed that abdominal cramps was most frequently reported (44.9%) by the respondents, followed by mood swing (34.9%), irritability (33.1%), fatigue (32.8%), and losing temper easily (30.4%). The majority of respondents (76%) reported at least one premenstrual symptom. A total of 91 (32.6%) respondents had less than five symptoms. Only 67 (24.0%) respondents reported no premenstrual symptoms. The mean score of symptoms was 6.35 (SD±6.98).

Diaa Rizk EE, et al (2006) conducted a study on prevalence and impact of premenstrual syndrome in adolescent schoolgirls United Arab Emirates. Adolescent girls aged between 12-18 years with at least 1 year of post menarcheal were selected from five private and five public schools (n=70×10=700) in Al-Ain city using a

multistage stratified cluster-sampling technique. The prevalence of premenstrual syndrome was 16.4% (n=115). Out of 115 subjects only 52 (45.2%) subjects were currently taking treatment for premenstrual syndrome and the majority 60% used pharmacological therapy. Premenstrual syndrome had significant negative impact ($p<0.001$) on the quality of life, such as school performance, social interactions, life style, and emotional well-being. Difficulty in performing school function and decrease in stigma were the two most adversely affected parameters. Premenstrual syndrome is a prevalent, yet undertreated disorder in adolescent schoolgirls in the United Arab Emirates, which adversely affects their emotional well-being, educational performance and representing as a significant public health problem.

Studies related to Jacobson muscle relaxation therapy on premenstrual syndrome.

Zahra Mohebbi Dehvani et al. (2016) conducted a clinical trial to assess the effect of 8 weeks progressive muscle relaxation exercise on severity of physical symptoms of premenstrual syndrome in student dormitories of Mashhad University of Medical Sciences, Iran. 65 samples were randomly assigned to control and intervention group. The intervention group were engaged in 8 weeks of progressive muscle relaxation exercise, three times a week, and 20 minutes for each session. The result revealed that, there was a significant reduction of premenstrual syndrome physical symptoms such as head ache, nausea, vomiting, constipation, diarrhea, abdominal bloating, hot flashes and increase in appetite in the intervention group and no changes in control group. Finally the researchers concluded that, progressive muscle relaxation exercise is one of the effective way to treat physical symptoms of premenstrual syndrome.

Fatemeh Kimiyaee Asadi et al. (2016), conducted a study to assess the effect of muscle relaxation therapy on premenstrual syndrome among adolescent girls at Islamic Azad University, Hamedan, Iran. 80 subjects were categorized into control group (40), and experimental group (40). Experimental group received one hour session of intervention per week for 6 months and the control group did not receive intervention. The result showed that in experimental group premenstrual syndrome was reduced compared to the control group.

Marwa A. Mohamed et al. (2016), conducted a comparative study to assess the effectiveness of foot reflexology and relaxation training on premenstrual syndrome among adolescent females. 50 samples were selected for the study and they were randomly assigned in Group (A) and Group (B). Group (A) comprised of 25 samples who received foot reflexology in addition to relaxation training techniques twice a week for 8 weeks. Group (B) comprised of 25 samples, who received relaxation training techniques only twice a week for 8 weeks. Assessment of all subjects in both groups were carried out before and after the intervention program through heart rate, respiratory rate in addition to plasma cortisole level and daily symptoms report chart. The result showed a statistical highly significant decrease ($p<0.001$) in heart rate, respiratory rate, plasma cortisol level as well as daily symptoms report score in group (A) while there was a statistical significant decrease ($p<0.05$) in all variables in group (B).

Latha Venkatesan et al. (2016) conducted a study on the effectiveness of progressive muscle relaxation technique on premenstrual symptoms among the hostel students in Apollo college of nursing, Chennai.premenstrual syndrome diary was distributed and instructed to maintain for a month. Among the 200 population, 50 samples with premenstrual syndrome were selected by lottery method. Progressive

muscle relaxations were given to the samples for 30 minutes every day for 5 days in a week for the duration of 2 months. Again premenstrual syndrome diary was distributed to all the samples. The outcomes of this study were, there was a significant reduction in the severity of premenstrual symptoms. 66% of the samples had severe level of premenstrual syndrome but after the intervention, 68% had moderate level of premenstrual syndrome and 2% had mild level of premenstrual syndrome. Regarding pain, 56% had severe level of pain and 44% had moderate level of pain, but after the intervention, 82% of the samples had moderate level of pain and 8% of the samples had mild level of pain. Hence there was a significant difference in the premenstrual syndrome score before and after the intervention at ($p<0.05$) level. This study proved the effectiveness of PMR technique in the reduction of premenstrual syndrome symptoms.

M.Sudhadevi, et al. (2016), conducted a study to find out the effectiveness of Jacobson's Progressive Muscle Relaxation Exercises on Premenstrual syndrome among students at selected school in Erode. Study findings revealed that during pretest, 46.7% samples had mild level of premenstrual syndrome, 50% samples had moderate level of premenstrual syndrome and 3.3% samples had severe level of premenstrual syndrome, where as in the post test, 96.7% had mild level of premenstrual syndrome and 3.3% had moderate level of premenstrual syndrome. The results showed that practice of Jacobson's progressive muscle relaxation exercise was found to be effective in reducing premenstrual syndrome.

Su-Ying Tsai (2015), conducted a study to evaluate the effect of progressive muscle relaxation exercise on premenstrual syndrome among female employees in Taiwan. 64 female employees were selected for the study. Progressive muscle relaxation exercise was given twice a week (50 minutes session) for 12 weeks period.

Each 50 minutes session comprised 5 minutes breathing exercise, 35 minutes progressive muscle relaxation exercise, and 10 minutes supine relaxation. The result revealed that, progressive muscle relaxation exercise significantly decreased physical symptoms of premenstrual syndrome like abdominal distention, breast tenderness, abdominal cramps, body pain and decreased premenstrual distress. Finally the researcher concluded that, progressive muscle relaxation exercise correlated with improvement in the six scales of the SF-36 (physical function, body pain, general health perception, vitality/energy, social function and mental health).

Sirajudin Noor, et al. (2015), conducted a study on changes of premenstrual symptoms after Jacobson muscle relaxation exercise intervention among nursing students at Academy of Nursing Intan Martapura and Midwifery Academy Banjarbaru, Indonesia. Based on the purposive sampling technique, 40 respondents were selected and they were categorized into control group (20), and experimental group (20). The result revealed that, in experimental group, there was a difference in premenstrual symptoms before and after intervention, but in control group, no differences in premenstrual symptoms between pretest and posttest. Finally the researchers suggested that, performing regular Jacobson muscle relaxation exercise is one of the important techniques to reduce the symptoms of premenstrual syndrome complaints.

Kusuma Sachin et al. (2014), conducted a study to evaluate the effects of regular muscle relaxation exercise on premenstrual symptoms in reproductive age group females at Mangalore. Out of 100 samples 50 samples were categorized into exercising group (muscle relaxation exercise) and the non-exercising group. The exercising group included 50 females who were selected from the health and fitness centres in Mangalore. The control group included 50 females selected from the

general population. The result revealed that, the psychological, behavioral, and physical symptoms were significantly lower ($p<0.001$) in the exercising group than the non-exercising group.

Veena Jasuja et al. (2014), conducted a study to assess the psychological parameters and effects of Progressive Muscle Relaxation (PMR) on female with premenstrual syndrome. 60 participants aged between 18-40 years were the sample and they were divided into Group A and Group B. Progressive muscle relaxation technique was given to Group A for one month and no intervention given for control group. The result revealed that, Group A showed significant decrease in both Beck Depression Inventory and State Trait Anxiety Inventory scores ($P<0.001$). Finally, the researcher concluded that PMR helps to alleviate symptoms of premenstrual syndrome, decreases anxiety and depression.

Javad Khalatbari et al. (2013), conducted a study to assess the effect of muscle relaxation therapy on premenstrual syndrome in Dormitory Students of Azad Tonekabon University of Iran. 80 samples were selected, 40 for experimental group and 40 for control group. The experimental group received muscle relaxation training in 7 sessions (each session included 30 minutes) and the control group did not receive any intervention. The result showed that muscle relaxation training was helpful in reducing premenstrual syndrome. The researchers recommended the health professionals to notice non-drug therapy treatment especially muscle relaxation therapy in order to control signs of premenstrual syndrome.

Sonia.V.R,(2011), conducted a study to evaluate the effectiveness of Jacobson Progressive Muscle Relaxation Exercise on premenstrual syndrome among adolescent girls in selected schools at Coimbatore. Total sample size was 60. The study findings revealed that, in experimental during pretest, majority of the adolescent girls 19

(63.3%) had moderate level of premenstrual symptoms and 11 (36.7%) had mild level of premenstrual symptoms. After Jacobson Progressive Muscle Relaxation Exercise during posttest, all the samples (100%) had mild level of premenstrual syndrome and there was a significant reduction in their posttest score level ($p<0.001$). In control group there was no difference in the level of premenstrual syndrome between pre test and post test. Finally the researcher concluded that after the practice of Jacobson Progressive Muscle Relaxation Exercise, the level of premenstrual syndrome has decreased significantly and they felt relaxed very much.

Lindse Mary.L, Tamilmani.R (2009) conducted a quasi experimental study in Tirunelveli to evaluate the effectiveness of Jacobson Progressive Muscle Relaxation Exercise on premenstrual syndrome among 30 college girls. Intervention was given through a video CD and was administered for 4 weeks. Study concluded that Jacobson Progressive Muscle Relaxation Exercise was effective in the reduction of premenstrual syndrome and it can be used as supportive therapy for premenstrual syndrome.

Hermann, (2007), conducted a study on Jacobson muscle relaxation in reducing anxiety and premenstrual symptoms. 24 participants were selected and treatment period of 6 sessions of Jacobson muscle relaxation training and 8 weeks of follow up was given by the researcher. The result showed a reduction of premenstrual syndrome and anxiety.

Hye Sook Jang et al. (2005), conducted a study to evaluate the effectiveness of progressive muscle relaxation therapy on pain and other symptoms in premenstrual syndrome among 46 college students. Results suggested that therapy had a significant effect on pain and water retention. In addition, there were significant short term effects on pain, mental depression, and anxiety. These result stated that progressive

muscle relaxation therapy might be useful as a nursing intervention for premenstrual syndrome.

Clare Stevingston, (2003), conducted a single-blind, sham-controlled and randomized controlled trial study to evaluate the effectiveness of progressive muscle relaxation training on premenstrual syndrome. Finally the researcher concluded that, Progressive muscle relaxation therapy showed greater improvements in physical symptoms and also had superior effects on emotional symptoms.

CONCEPTUAL FRAMEWORK

MODIFIED ORLANDO'S NURSING PROCESS MODEL

The conceptual framework "sets the stage" for the presentation of the particular research question that drives the investigation being reported based on the problem statement. The problem statement of a thesis presents the context and the issues that caused the researcher to conduct the study.

The present study aims to evaluate the Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls.

The researcher adopted the Orlando's Nursing Process Model. The model was introduced by Ida Jean Orlando (1961). The theory stresses the reciprocal relationship between the patient and nurse. It emphasizes the critical importance of the patient's participation in the nursing process.

Orlando's goal is to develop a theory of effective nursing practice. The theory explains that the role of the nurse is to find out and meet the patient's immediate needs. According to the theory, all patients behavior can be a cry for help. Through these, the nurse's job is to find out the nature of the patient's distress and provide the help for their needs.

The Orlando's nursing process model is used to explain the nurses role in reduction of premenstrual syndrome among adolescent girls. By using this theory, the researcher find out the level of premenstrual syndrome among adolescent girls and that Jacobson muscle relaxation therapy is the intervention that is expected to reduce the level of premenstrual syndrome.

Orlando's nursing process has five stages

- Assessment
- Diagnosis

- Planning
- Implementation
- Evaluation

Assessment

In this stage, the nurse completes a holistic assessment of the patient's needs. The nurse uses a nursing framework to collect both subjective and objective data from the client.

In the present study, the researcher collects the subjective data from adolescent girls those who have moderate to severe level of premenstrual syndrome by using Premenstrual syndrome screening tool.

Diagnosis

The diagnosis stage uses the nurse's clinical judgment about health problems. The diagnosis can then be confirmed by using links to define characteristics, related factors, and risk factors found in the patient's assessment.

In the present study, the researcher diagnosed the level of premenstrual syndrome among the control and experimental group by using Modified premenstrual Syndrome Scale. Based on the pretest score level, those who scored between1-35 belonged to the category of very mild symptoms, those who scored between 36-70 belonged to mild symptoms, those who scored between 71-105 belonged to moderate symptoms, those who scored between 106-140 belonged to severe symptoms and those who are scored between 141-175 belonged to very severe symptoms.

Planning

The planning stage addresses each of the problems identified in the diagnosis. Each problem is given a specific goal or outcome, and each goal or outcome is given

nursing interventions to achieve the goal. By the end of this stage, the nurse will have a nursing care plan.

The goal of the present study is to reduce the level of premenstrual syndrome. Here the researcher planned to administer Jacobson muscle relaxation therapy for 28 days to the adolescent girls with premenstrual syndrome.

Implementation

In the implementation stage, the nurse begins to use the nursing care plan in which the actions necessary for achieving the goals and expected outcomes of nursing care are initiated and completed. It is a continuous process and interacts with the other components of the nursing process.

In this study, the intervention is the Jacobson muscle relaxation therapy which was practiced for 25-30 minutes once a day for 28 days.

Evaluation

In this stage, the nurse looks at the progress of the patient towards the goals set in the nursing care plan. Changes can be made to the nursing care plan based on how well (or poorly) the patient is progressing toward the goals. If any new problems are identified in the evaluation stage, they can be addressed, and the process starts over again for those specific problems.

In the present study, posttest assessment was done by using the same Modified Premenstrual syndrome Scale. The symptoms were reduced by means of effective nursing intervention.

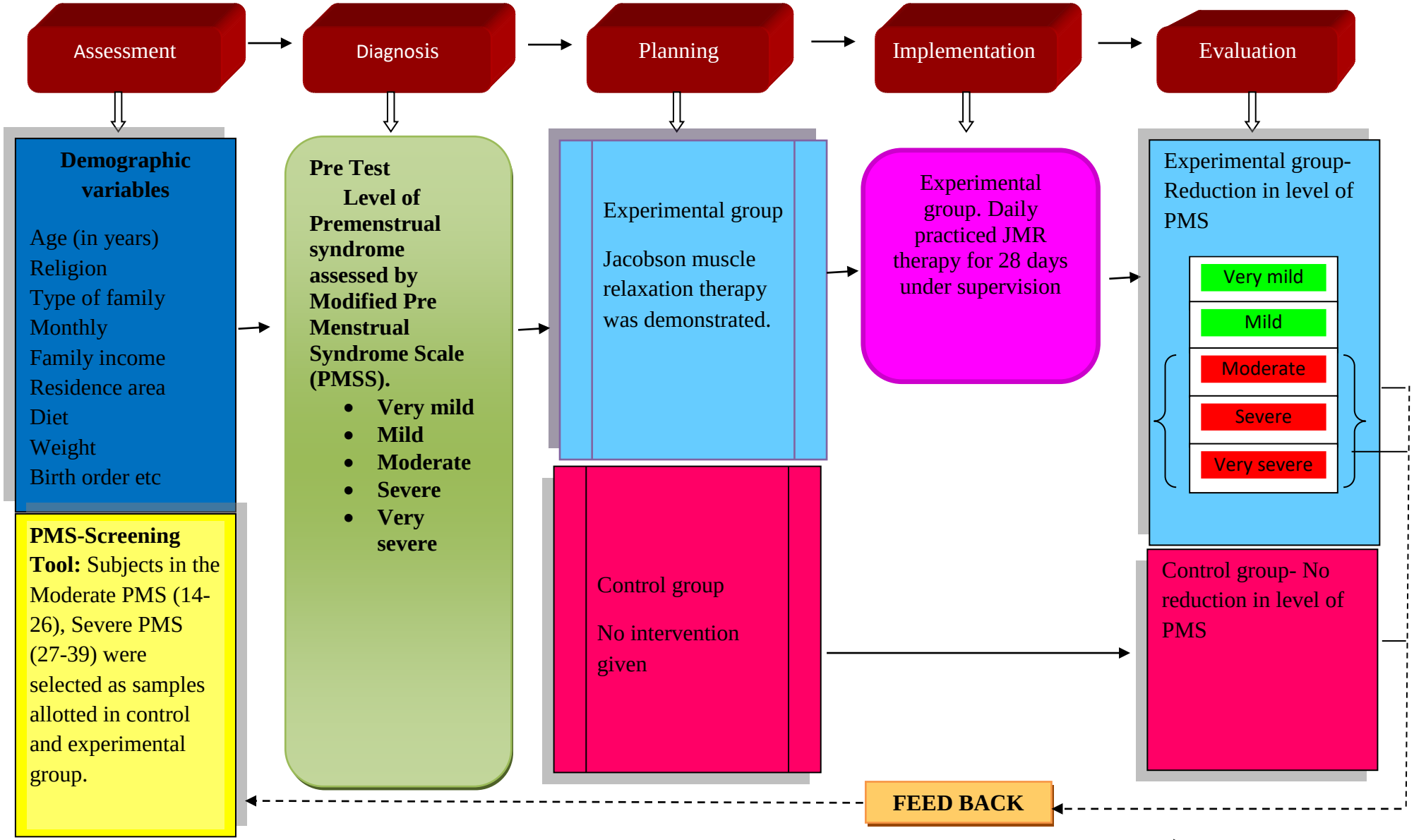


FIGURE 1: CONCEPTUAL FRAMEWORK BASED ON MODIFIED ORLANDO'S NURSING PROCESS MODEL

CHAPTER III

RESEARCH METHODOLOGY

Methodology is the systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge.

This chapter consists of research approach and design, variables, setting, population, sampling, development of the tool, description of the tool, validity, reliability, data collection procedure and plan for data analysis.

Present study is aimed to evaluate the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in selected school at Madurai.

RESEARCH APPROACH

Research approaches are plans and the procedures for research. Based on the purpose of the research study, the choice of research approach will be vary, that spans the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation.

A quantitative research approach was used to evaluate the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls.

RESEARCH DESIGN

A research design is the set of methods and procedures used in collecting and analyzing measures of the variables specified in the research problem.

Quasi experimental non-equivalent pre test- posttest control group design was adopted to determine the effectiveness of Jacobson muscle relaxation therapy on Pre menstrual syndrome among adolescent girls.

The diagrammatic representation of research design

Research group	**Measurement of dependent variable (pre test)**	**Manipulation of independent variable**	**Measurement of dependent variable (post test)**
Experimental group	O_1	X	O_2
Control group	O_1	_	O_2

Key

O_1 : Pre test level of premenstrual syndrome in control and experimental group

O_2 : posttest level of premenstrual syndrome in control and experimental group

X : Application of Jacobson muscle relaxation therapy for experimental group

SETTING OF THE STUDY

Setting is the place or type of surrounding where a study is conducted. Present study was conducted in C.S.I. Girls Higher Secondary School at Pasumalai, Madurai. The school was located ½ kilometer away from the C.S.I. Jeyaraj Annapackiam College of nursing. The total numbers of students are 2000. The students studying in 7^{th} -9^{th} standard are 277 students, among them 184 students were attained menarche. Based on the premenstrual syndrome screening (N=60) subjects are selected, (n=30) for control group and (n=30) for experimental group. The students are not practicing yoga or any kind of complementary therapy at school.

VARIABLES

Variables are the levels of abstraction that are measured, manipulated or controlled in a study. The following categories of variables are discussed in this present study.

Independent variable: An independent variable is the variable that is manipulated to determine the value of a dependent variable. Jacobson muscle relaxation therapy is the independent variable for this study.

Dependent variable: A dependent variable is a variable whose value depends upon independent variable. Level of premenstrual syndrome is the dependent variable for this study.

Extraneous variables: Extraneous variables are the research environments which may have an effect on the dependent variable (s) but which are not controlled. In the present study, extraneous variables refer to the demographic variables such as age (in years), religion, type of family, monthly family income (in rupees), type of residence, diet, weight (in kg), birth order, educational status of the mother, the type of beverages which you take often, do you follow regular physical exercise, how many hours you sleep per day, when you attained menarche, frequency of menstrual cycle, how many days you have menstrual flow, how many pads you change/day, family history of premenstrual syndrome and how many days you have premenstrual syndrome.

POPULATION

Population is a complete set of elements that possess some common characteristics defined by the sampling criteria established by the investigator. Adolescent girls are the population of this study.

Target population

The target population is the entire population, or group, that a researcher is interested in researching and analyzing.

The target population of this study is the school going adolescent girls with premenstrual syndrome.

Accessible population

Accessible population is a subset of the target population in which the researchers can apply their conclusions.

Accessible population for this study is adolescent girls between12-14 years of age with premenstrual syndrome studying in C.S.I. Girls Higher Secondary School at Madurai, Tamil Nadu.

SAMPLE

Sample refers to a group drawn from a larger population and used to estimate the characteristics of the whole population. Adolescent girls who have moderate to severe level of premenstrual syndrome and those who fulfilled the inclusion criteria from selected school at Madurai, Tamil Nadu are considered as the study sample.

SAMPLE SIZE

In this present research study, the sample consists of 60 adolescent girls were allotted to two groups namely experimental group (30) and control group (30).

SAMPLING TECHNIQUE

A sampling technique is the name or other identification of the specific process by which the entities of the sample have been selected.

Non-Probability purposive sampling technique was adopted for this study which means selection of the most readily available persons as participants in the study. Based on the inclusion and exclusion criteria, 30 samples are allotted for experimental group and 30 samples for control group.

INCLUSION CRITERIA

Adolescent girls who,

- have regular menstrual period
- have premenstrual syndrome in the 2-3 consecutive period
- are between 12-14 years of age
- are studying 7^{th}-9^{th} standard
- have premenstrual symptoms screening score of 14-26 (Moderate level of premenstrual syndrome), 27-39 (Severe level of premenstrual syndrome) has their menstrual period due within one week of pre test.
- are free from complications such as menorrhagia, oligomenorrhoea, fibroid cramping, etc
- understand or speak both Tamil and English
- are present during the period of data collection

EXCLUSION CRITERIA

Adolescent girls who,

- have any other medical disorders such as hypo thyroidism, leukemia, endocrine disorders etc., psychiatric illness like major depression, phobic disorders, psychotic disorders etc., and gynecological problems like puberty menorrhagia, polycystic ovarian syndrome, androgen excess disorder etc
- have injuries, fracture and underwent any recent surgeries

- are taking selective serotonin reuptake inhibitors, hormonal birth control medicine, warfarin etc
- have any coagulation disorders like hemophilia, Factor II, V, VII or XII deficiencies, thrombocytopenia, etc
- are regularly practicing alternative therapies like yoga, exercises etc
- are using home remedies such as fenugreek seeds, mint, lemon, ginger for premenstrual syndrome.

DEVELOPMENT OF THE TOOL

Data collection tools are the procedures or instruments used by the researcher to observe or measure key variables in the research problem. Based on the objectives of this study, the following tool was constructed by the researcher.

DESCRIPTION OF THE TOOL

The tools are developed with the help of various resources and review of literature.

The following steps were adopted prior to the development of the tool.

i. With the help of an extensive review of literature from various resources (textbooks, journals, websites, Pubmed, Medline search etc) in order to select the most suitable and appropriate tool for this study.
ii. Periodic school health program attended by the investigator.
iii. Consultation and discussion with experts from O.B.G specialized doctors, nursing personals, and biostatistician.
iv. Preparation of blue print

In this study the tool consists of three sections and is explained as follows:

- Section A: Premenstrual syndrome screening tool
- Section B: socio- demographic variables
- Section C: Modified Premenstrual syndrome scale

Section A: Premenstrual syndrome screening tool

Premenstrual syndrome screening tool consist of 13 items based on the common premenstrual symptoms.

Scoring procedure

Based on the percentage of scores, the levels of premenstrual syndrome were graded in three categories. They are "Mild level- 0 to 13", "Moderate level- 14 to 26", and "Severe level-27 to 39". The lowest score is "0" and the maximum score is "39". Samples who fall in the category of "moderate" and "severe" level of premenstrual syndrome were taken as participants.

S.No	Level of premenstrual syndrome	Score
1	Mild	0-13
2	Moderate	14-26
3	Severe	27-39

Section B

It contains the socio – demographic characteristics of adolescent girls, such as age (in years), religion, type of family, monthly family income (in rupees), type of residence, diet, weight (in kg), birth order, educational status of the mother, the type of beverages taken often, do you follow regular physical exercise, how many hours you sleep per day, when you attained menarche, frequency of menstrual cycle, how

many days you have menstrual flow, how many pads you change/day, family history of premenstrual syndrome and days of premenstrual syndrome.

Section C

It contains the premenstrual syndrome scale which was used to assess the premenstrual syndrome among adolescent girls. It has 4 components, namely physical, psychological, behavioral and psychosocial symptoms

1. Physical symptoms consists of 11 items which include breast tenderness, head ache, pelvic discomfort, joint and muscle cramps, abdominal bloating, fatigue, fainting, nausea , pimples, Change in bowel habits and Food cravings.
2. Psychological symptoms consist of 9 items which include anxiety, irritability, mood swings, lack of concentration, sleep pattern disturbance, depression, forgetfulness, confusion and easy crying.
3. Behavioral symptoms consists of 9 items which include Obsessional thought, lack of self control, feeling guilt, irrational thought, poor judgment, being over sensitive, restlessness, compulsive behavior and clumsiness.
4. Psycho-social symptoms consists of 6 items which include affect academic activities, affect relationship with friends and family members, social withdrawal, less interest in home activities, less interest in playing and missing school.

Scoring procedure

For each symptoms according to the severity, score was given from 1-5. The minimum score is “35” and the maximum score is “175”. Based on the scores the levels of premenstrual syndrome were graded in five categories. They are “Very mild”, “Mild”, “Moderate”, “Severe”, and “Very severe”.

Level of premenstrual syndrome	Score
Very mild	1-35
Mild	36-70
Moderate	71-105
Severe	106-140
Very severe	141-175

VALIDITY

The tool was checked and evaluated by 11 experts in the field of Obstetrics and gynecology, Jacobson muscle relaxation therapist, Mental health nursing, Community health nursing, Pediatric health nursing and nursing experts specialized in obstetrics and gynecological nursing.

RELIABILITY

Reliability is a measure of the stability, consistency and accuracy of the tool. The modified Premenstrual syndrome Scale was administered to 6 adolescent girls with premenstrual syndrome and the reliability co-efficient was calculated by split half method. Co-efficient correlation score was 0.8 which revealed that the reliability of the tool prepared by the researcher were acceptable.

PILOT STUDY

A pilot study is a small scale preliminary study conducted in order to evaluate feasibility, time, cost, adverse events, and improve upon the study design prior to performance of a full-scale research project.

A pilot study was conducted in C.S.I Girls Higher Secondary School at Madurai among 6 adolescent girls with premenstrual syndrome (3 for experimental group and 3 for control group). The subjects for the pilot study possessed the same characteristics as that of the sample for the final study. The purpose was to find out the reliability and feasibility of the study. The result proved that Jacobson muscle relaxation therapy was effective in reducing premenstrual syndrome and the tool was found to be reliable and feasible to conduct the study.

METHOD OF DATA COLLECTION PROCEDURE

Formal permission was obtained from concerned authority at C.S.I Jeyaraj Annapackiam College of Nursing, Madurai to conduct the study. Prior and written permission have been obtained from the Head Mistress of C.S.I Girls Higher Secondary School, Madurai. Data collection procedure was done for a period of 6 weeks.

The samples were selected based on the inclusion criteria. Non-equivalent purposive sampling technique was adopted to select the samples. Each day 6-8 samples were selected. The samples were explained about the aim and purpose of the study. Oral consent was obtained and assured confidentiality of the data.

First, premenstrual syndrome screening tool was used to select the samples. The girls with moderate and severe level of premenstrual syndrome were assigned alternatively to the control and experimental group. Then, pretest level of premenstrual syndrome was assessed to both the control and experimental group by Modified Pre Menstrual Syndrome Scale.

The investigator ensured privacy, dignity and respected the religion as well as the cultural belief of the samples during the study process. The experimental group subjects were assembled in school ground. On first day of intervention the

investigator demonstrated the Jacobson muscle relaxation therapy and made the samples to do the Jacobson muscle relaxation therapy. The investigator clarified their doubts regarding Jacobson muscle relaxation therapy. From second day onwards the subjects were instructed to do the JMR for 25-30 minutes once a day- under the supervision of the investigator for 28 days. On 28th day posttest level of premenstrual syndrome was assessed in both the control and experimental group by Modified Pre Menstrual Syndrome Scale.

DEVELOPMENT OF INTERVENTION

Step I

Verbal consent was obtained from the samples and adequate information about the research was given to the participants and ensured adequate privacy and dignity of the samples during the study process.

Step II

The experimental group subjects were arranged in the school play ground and explained the needs and importance of doing Jacobson muscle relaxation therapy. First the Jacobson muscle relaxation was done from head followed by middle parts of the body and then lower extremities.

Preparation of the subjects:

- Subjects were assembled in school play ground, and make them comfortable standing position.
- Instruct to close their eyes and allow the attention to focus only on the body.

For head, face and neck:

- In head, first instruct the subjects to elevate the eyebrows, hold on for five seconds, asked to experience muscle tension in forehead then gradually relax the forehead muscle.
- Instruct to close the eye lids tightly, hold on for five seconds, asked to experience muscle tension, then gradually relax the eye muscles.
- Instruct to elevate the cheeks with hands, hold on for five seconds, asked to experience muscle tension, then gradually relax the cheek muscles.
- Instruct to open the mouth as much as wider, hold on for five seconds, asked to experience muscle tension, then gradually relax the mouth muscles.
- Instruct to press the lips tightly together, hold on for five seconds, asked to experience muscle tension, then gradually relax the lip muscles.
- Instruct to pull the both ears in sideward, hold on for five seconds, asked to experience muscle tension, then gradually relax the ear muscles. Same like the ears are pulled upwards and downwards, hold on for five seconds, asked to experience muscle tension, then gradually relax the ear muscles.
- Instruct to tilt the neck towards the left shoulder, hold on for five seconds, asked to experience muscle tension, then gradually relax the neck muscles, the same should be repeated towards right side shoulder.
- Bend the neck downwards to the clavicle bone, hold on for five seconds and then gradually relaxed the neck muscles, same like the neck should be extended, hold on for five seconds, and then gradually relax the neck muscles.

- Instructed the subjects to take deep breath through nose then slowly exhale from the mouth repeat it for three times, and then asked the subjects to experience that, their head muscles are completely relaxed.

For middle part of the body

- Instruct to extend their hands in sideward, hold on for five seconds, asked to experience muscle tension and gradually relax the hand muscles.
- Instruct to shrug their shoulders straight up towards the ears, hold on for five seconds, asked to experience muscle tension and gradually relax the shoulder muscles.
- Instruct to flex their elbows and hold their shoulders with hands, hold on for five seconds, asked to experience muscle tension and gradually relax the hand muscles.
- Instruct to bend their wrist backwards, hold on for five seconds, asked to experience muscle tension and gradually relax the wrist muscles.
- Instruct to interlocking their fingers, hold on for few seconds, asked to experience muscle tension and gradually relax the fingers.
- Instruct to lean forward and try to touch the feet with hands, hold on for five seconds, asked to experience muscle tension and gradually relax the back muscles.
- Instruct to lean backward their body, hold on for five seconds, asked to experience muscle tension and gradually relax the back muscles.
- Instruct to lean the body towards left side, hold on for five seconds, asked to experience muscle tension and gradually relax the muscles and repeat the same at right side.

- Instruct to keep the hands on abdomen, asked to gently tighten the abdominal muscles through taking deep breath, hold on for five seconds, asked to experience muscle tension and gradually relax the abdominal muscles through breath out.
- Instruct to tense the muscle around the buttocks, hold on for five seconds, asked to experience muscle tension and gradually relax the muscles around the buttocks.
- Instructed the subjects to take deep breath through nose then slowly exhale from the mouth repeat it for three times, and then asked the subjects to experience that, their middle part of the body muscles are completely relaxed.

For lower extremities

- Instruct to extend their left leg, hold on for five seconds, asked to experience muscle tension and gradually relax the thigh muscles and repeat the same steps in right leg.
- Instruct to flex the left knee, hold on for five seconds, asked to experience muscle tension and gradually relax the cuff muscles and repeat the same steps in right knee.
- Instruct to maintain chair position, hold on for five seconds, asked to experience muscle tension and slowly relax the muscles.
- Instruct to extend the left foot, hold on for five seconds, asked to experience muscle tension and gradually relax the foot muscles, and repeat the same steps in right foot.
- Instruct to tightly flex their toes, hold on for five seconds, asked to experience muscle tension and gradually relax the toes.

- ❖ Instruct to curl the toes under tensing the feet, hold on for five seconds, asked to experience muscle tension and gradually relax the feet.
- ❖ Instruct to clench their toes and pressing their heels towards the ground, hold on for five seconds and gradually relax the heel muscles.
- ❖ Instructed the subjects to take deep breath through nose then slowly exhale from the mouth repeat it for three times, and then asked the subjects to experience that, their lower extremity muscles are completely relaxed.
- ❖ Finally complete the therapy by doing whole body stretch and instruct to feel the whole body muscles and mind are completely relaxed.

The intervention was given in the evening between 4.00 pm to 5.00 pm. Routine academic activities were not disturbed due to the administration of the intervention.

For each organ from head to toes constriction and gradual muscle relaxation were done. After completion of the exercise the subjects were instructed to take deep breath, and hold on for few minutes and slowly breathe out, this help them to feel relaxed. Therapy was administered once in a day 25- 30 minutes for 28 days.

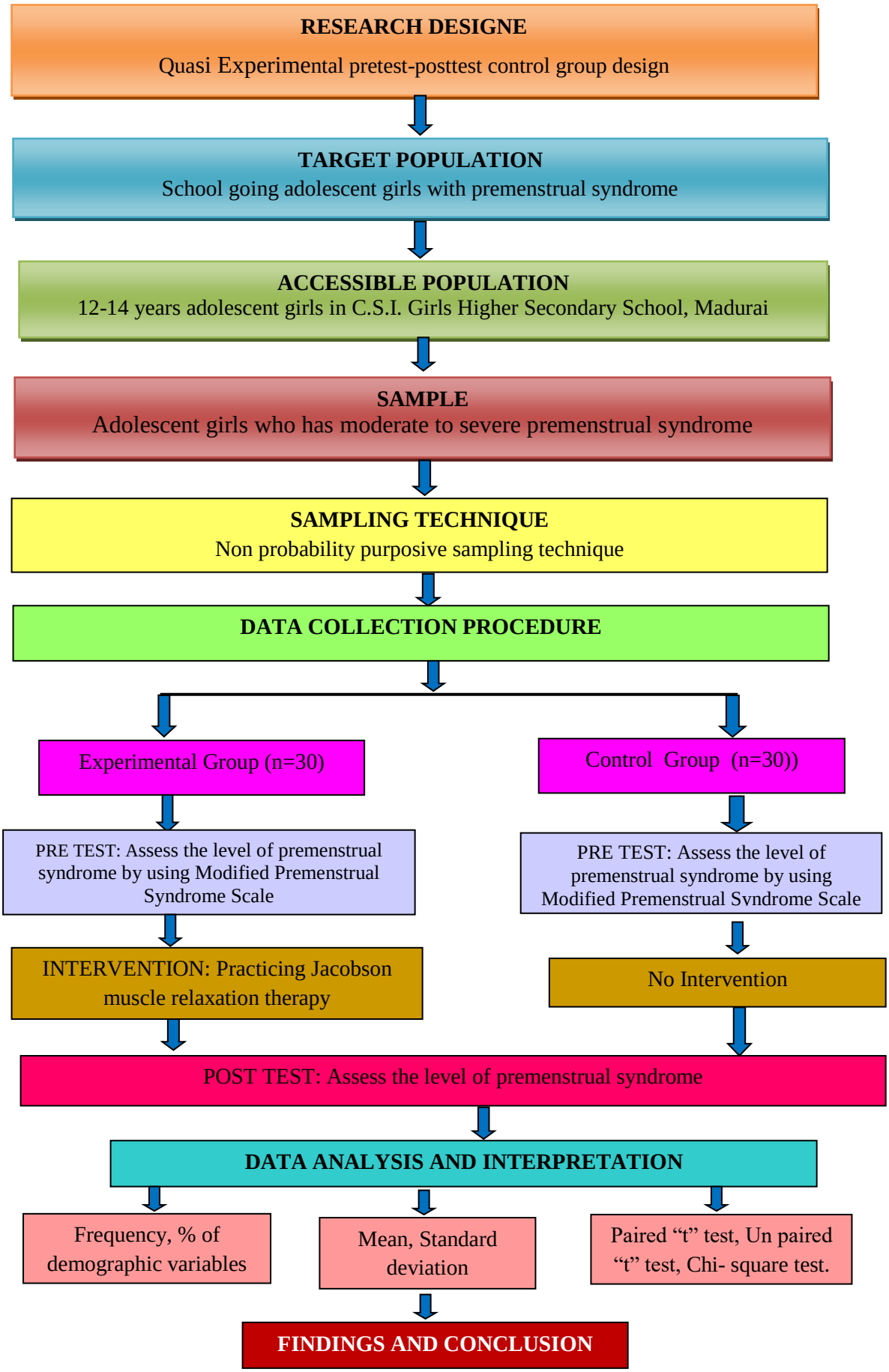
PLAN FOR DATA ANALYSIS

The demographic variables were organized by using descriptive statistics (frequency and percentage). The effectiveness of Jacobson muscle relaxation therapy on reduction of premenstrual syndrome was analyzed by mean, standard deviation, paired “t” test and unpaired “t” test. Association between the level of premenstrual syndrome and the selected demographic variables were assessed by chi-square test.

PROTECTION OF HUMAN RIGHTS

The study was conducted after getting approval from the college research ethical committee. The nature and purpose of the study was explained to the Head Mistress and obtained permission to conduct the study in the school. The oral consent was obtained from the study participants to get full co-operation during the study period. Assurance was given to the study samples that the anonymity of each individual would be maintained strictly.

FIG.2 SCHEMATIC REPRESENTATION OF RESEARCH DESIGN



CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

Marshall and Rossman (1999) describe data analysis as the process of bringing order, structure and meaning to the mass of collected data.

This chapter deals with the analysis and interpretation of data to analyze the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in C.S.I Girls Higher Secondary School, Madurai.

The data collected from 60 samples were grouped and the obtained data are tabulated, analyzed using descriptive and inferential statistics. The results are presented under the following.

The findings are organized and presented under the following sections.

Section –I:

It presents the,

- Frequency and Percentage wise distribution of samples based on their demographic variables.

Section-II:

It presents the,

- Pretest-posttest means score of premenstrual syndrome in control group.
- Pretest-posttest means score of premenstrual syndrome in experimental group.
- Posttest means score of premenstrual syndrome in control and experimental group.

Section-III:

It presents the,

- Distribution of samples based on level of premenstrual syndrome in control and experimental group.
- Comparison of pretest and posttest mean scores of premenstrual syndrome in control group.
- Comparison of pretest and posttest mean scores of premenstrual syndrome in experimental group.
- Comparison of posttest mean scores of premenstrual syndrome between the control and experimental group.

Section-IV:

It presents the,

- Association between the level of premenstrual syndrome with the selected demographic variables in control and experimental group.

SECTION - I

Table-4.1.1: Frequency and percentage wise distribution of samples based on the demographic variables in control and experimental group.

(N=60)

Demographic variables	Control group (n=30)		Experimental group (n=30)	
	f	%	f	%
1.Age (in years)				
12 years	7	23.3	8	26.7
13 years	10	33.3	10	33.3
14 years	13	43.3	12	40
2.Religion				
Hindu	25	83.3	19	63.3
Muslim	0	0	2	6.7
Christian	5	16.7	9	30
Others	0	0	0	0
3. Type of family				
Nuclear family	25	83.3	21	70
Joint family	5	16.7	9	30
4. Monthly Family income (In Rupees)				
<3000	8	26.7	11	36.7
3001-5000	12	40	11	36.7
5001-10000	8	26.7	4	13.3
>10000	2	6.7	4	13.3
5. Type of residence				
Urban	13	43.3	21	70
Rural	17	56.7	9	30
6.Diet				
Vegetarian	6	20	3	10
Non vegetarian	24	80	27	90

7.Weight (in kg)				
Below 30 kg	6	20	11	36.7
31-35 kg	11	36.7	8	26.7
36-40 kg	10	33.3	5	16.6
41-45 kg	3	10	5	16.6
46-50 kg	0	0	1	3.3
Above 50kg	0	0	0	0
8.Birth order				
First child	7	23.3	10	33.3
Second child	16	53.3	16	53.3
Third and above	7	23.3	4	13.3
9. Educational status of the mother				
Primary	7	23.3	10	33.3
High school	12	40	14	46.7
Higher secondary	9	30	3	10
Graduate	1	3.3	0	0
Illiterate	1	3.3	3	10
10.Type of beverage which you take often				
Coffee	14	46.7	13	43.3
Tea	10	33.3	13	43.3
Milk	4	13.3	4	13.3
Fruit juice	2	6.7	0	0
None	0	0	0	0
11. Do you follow regular physical exercise				
Yes	0	0	0	0
No	30	100	30	100
12.How many hours you sleep per day				
<5 hours	5	16.7	5	16.7
5-7 hours	9	30	14	46.7
8-10 hours	14	46.7	8	26.6
>10 hours	2	6.7	3	10

13.When you attained menarche				
<12 years	20	66.7	18	60
>12 years	10	33.3	12	40
14.Frequency of menstrual cycle				
26-28 days	15	50	7	23.3
29-31 days	11	36.7	17	56.7
32-34 days	4	13.3	4	13.3
Above 35 days	0	0	2	6.7
15. How many days you have menstrual flow				
2-4 days	9	30	15	50
5-7 days	21	70	14	46.7
8-10 days	0	0	1	3.3
16.How many pads you change /day				
Less than 4 pads	16	53.3	21	70
4-5 pads	12	40	5	16.7
More than 5 pads	2	6.7	4	13.3
17.Family history of premenstrual syndrome				
Present	18	60	22	73.3
Absent	12	40	8	26.7
18.How many days you have premenstrual syndrome				
1-3 Days	22	73.3	20	66.7
4-6 days	8	26.7	6	20
7-10 days	0	0	4	13.3
>10 days	0	0	0	0

Table-4.1.1 shows the frequency and percentage wise distribution of samples based on the demographic variables in control and experimental group.

Regarding the age, 13 (43.3%) subjects in control group and 12 (40%) subjects in experimental group are in the age group of 14 years.

Regarding the religion, 25 (83.3%) subjects in control group and 19 (63.3%) subjects in the experimental group belong to Hindu religion.

In context to the type of family, 25 (83.3%) subjects in the control group and 21 (70%) subjects in the experimental group belong to the nuclear family.

Regarding the monthly family income, 12(40%) subjects in the control group and 11 (36.7) subjects in the experimental group are getting Rs 3001-5000 per month.

While portraying the type of residence, 17(56.7%) subjects in control group are residing at rural area and in contrast 21(70%) subjects are residing at urban area in experimental group.

Regarding the diet, 24(80%) subjects in the control group and 27 (90%) subjects in the experimental group take non-vegetarian diet.

When check the weight of the subjects, 11(36.7%) subjects in the control group have weighing between 31-35 kg, but in contrast 11(36.7%) subjects in the experimental group have weighing below 30 kg.

In context to birth order, 16 (53.3%) subjects are placed as a second child in control and experimental group.

While portraying the educational status of the mother, 12 (40%) subjects in the control group and 14 (46.7%) subjects in the experimental group mothers have up to high school education.

Regarding the type of beverages which you take often, 14 (46.7) subjects in the control group report that, they take coffee, but in contrast 13(43.3) subjects in experimental group report that, they take coffee and tea.

Regarding the regular physical exercise, all the subjects, 30 (100%) subjects in control group and 30(100%) subjects in experimental group report that, they did not follow any kind of regular exercises.

Regarding the hours of sleep per day, 14(46.7%) subjects in the control group report 8-10 hours sleep per day, but in contrast 14(46.7%) subjects in experimental group report 5-7 hours sleep per day respectively.

Regarding the age at menarche, 20(66.7%) subjects in control group and 18 (60%) subjects in experimental group are attained menarche before 12 years of age.

While portraying the frequency of menstrual cycle, 15(50%) subjects in control group are having 26-28 days of menstrual cycle, but in contrast 17(56.7%) subjects in experimental group are having 29-31 days of menstrual cycle.

Regarding the menstrual flow, 21(70%) subjects in control group are having 5-7 days of menstrual flow, but in contrast 15(50%) subjects in experimental group are having 2-4 days of menstrual flow.

Regarding the number of pads change per day, 16(53.3%) subjects in control group and 21(70%) subjects in experimental group are reported that, they change less than 4 pads per day.

Regarding the family history of premenstrual syndrome, 18(60%) subjects in control group and 22(73.3%) subjects in experimental group have the family history of premenstrual syndrome.

In context to number of premenstrual syndrome days, 22(73.3%) subjects in control group and 20(66.7%) subjects in experimental group have 1-3 days of premenstrual syndrome.

SECTION - II

Table-4.2.1: Pretest-posttest mean score of premenstrual syndrome in control group.

(n=30)

Premenstrual syndrome	Max score	Control group pre test			Control group post test			Difference in Mean%
		Mean	SD	Mean %	Mean	SD	Mean %	
Physical	55	31.5	6.07	57	30.77	7.34	56	1
Psychological	45	29.03	5.88	65	29.1	5.43	65	0
Behavioral	45	29.57	5.41	66	29.33	5.10	65	1
psychosocial	30	20.13	3.38	67	19.97	3.08	67	1
Overall	175	110.2	15.1	63	109.13	14.4	62	1

Table-4.2.1 depicts the pretest-posttest means score of premenstrual syndrome in control group.

The premenstrual syndrome is categorized into four components namely, physical, psychological, behavioral and psychosocial components.

The above table reveals that, in control group, pretest mean score of physical component is (31.5 ± SD 6.07) and posttest mean score is (30.77± SD 7.34). Pretest mean score of psychological component is (29.03 ± SD 5.88) and posttest mean score is (29.01± SD 5.43). Pretest mean score of behavioral component is (29.57 ± SD 5.41) and posttest mean score is (29.33 ± SD 5.10). Pretest mean score of psychosocial component is (20.13 ± SD 3.38), and posttest mean score is (19.97± SD 3.08). The overall control group pretest mean score is (110.2 ± SD 15.1), and posttest mean score is (109.13 ± SD 14.4).

Table-4.2.2: Pretest-posttest means score of premenstrual syndrome in experimental group.

(n=30)

Premenstrual syndrome	Max score	Experimental pre test			Experimental Post test			Difference in Mean%
		Mean	SD	Mean%	Mean	SD	Mean%	
Physical	55	32.4	6.76	59	17.33	4.08	32	27
Psychological	45	29.7	6.86	66	14.6	3.01	32	34
Behavioral	45	29.3	5.76	65	14.2	3.12	32	34
psychosocial	30	19.5	4.92	65	9	2.03	30	35
Overall	175	111	20.0	63	55.13	9.55	32	32

Table-4.2.2 reveals the pretest-posttest means score of premenstrual syndrome in experimental group.

The above table shows that, in experimental group, pretest mean score of physical component is (32.4 ± SD 6.76) and posttest mean score is (17.33 ± SD 4.08). Pretest mean score of psychological component is (29.7 ± SD 6.86), and posttest mean score is (14.6 ± SD 3.01). Pretest mean score of behavioral component is (29.3 ± SD 5.76), and posttest mean score is (14.2 ± SD 3.12). Pretest mean score of psychosocial component is (19.5 ± SD 4.92), and posttest mean score is (9 ± SD 2.03). The overall experimental group pretest mean score is (111 ± SD 20.0), and posttest mean score is (55.13 ± SD 9.55).

Table-4.2.3: Posttest means score of premenstrual syndrome in control and experimental group.

(N=60)

Premenstrual syndrome	Max score	Control -post test scores			Experimental - post test scores			Difference in Mean%
		Mean	SD	Mean%	Mean	SD	Mean%	
Physical	55	30.77	7.34	56	17.33	4.08	32	24
Psychological	45	29.1	5.43	65	14.6	3.01	32	33
Behavioral	45	29.33	5.10	65	14.2	3.12	32	33
Psychosocial	30	19.97	3.08	67	9	2.03	30	37
Overall	175	109.13	14.4	62	55.13	9.55	32	30

Table-4.2.3 expresses the posttest means score of premenstrual syndrome in control and experimental group.

The above table discloses that, control group, posttest mean score of physical component is (30.77 ± SD 7.34) and experimental group, posttest mean score of physical component is (17.33 ± SD 4.08). Control group, posttest mean score of psychological component is (29.01 ± SD 5.43) and experimental group, posttest mean score of psychological component is (14.6± SD 3.01). Control group, posttest mean score of behavioral component is (29.33 ± SD 5.10) and experimental group, posttest mean score of behavioral component is (14.2 ± SD 3.12). Control group, posttest mean score of psychosocial component is (19.97 ± SD 3.08) and experimental group, posttest mean score of psychosocial component is (9 ± SD 2.03). The overall control group posttest mean score is (109.13 ± SD 14.4) and the overall experimental group posttest mean score is (55.13 ± SD 9.55).

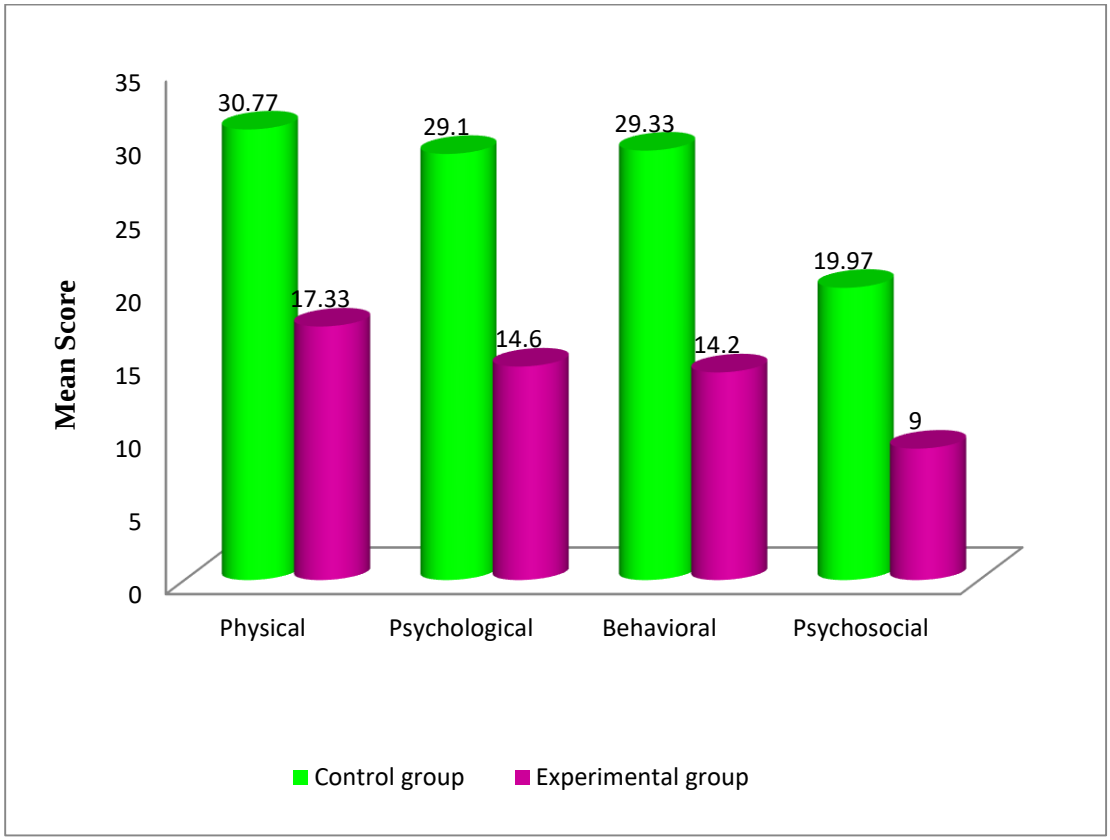


Fig.3- Posttest means score of premenstrual syndrome components in control and experimental group.

SECTION - III

Table-4.3.1: Distribution of samples based on level of premenstrual syndrome in control and experimental group.

(N=60)

Level of Premenstrual syndrome	Control group				Experimental group			
	Pre test		Post test		Pre test		Post test	
	f	%	f	%	f	%	f	%
Very mild	-	-	0	0	-	-	4	13.3
Mild	-	-	0	0	-	-	26	86.7
Moderate	14	46.7	14	46.7	16	53.3	0	0
Severe	14	46.7	14	46.7	11	36.7	0	0
Very severe	2	6.6	2	6.7	3	10	0	0
Total	30	100	30	100	30	100	30	100

Table-4.3.1 explains the distribution of samples based on level of premenstrual syndrome in control and experimental group.

In control group during pretest, 14 (46.7%) subjects have moderate level of premenstrual syndrome, 14(46.7%) subjects have severe level of premenstrual syndrome, only 2 (6.6%) subjects have very severe level of premenstrual syndrome and none of the subjects have very mild and mild level of premenstrual syndrome. But in experimental group during pre test, 16(53.3%) subjects have moderate level of premenstrual syndrome, 11(36.7%) subjects have severe level of premenstrual syndrome, only 3(10%) subjects have very severe level of premenstrual syndrome and none of the subjects have very mild and mild level of premenstrual syndrome. The distribution exposes that, in pretest, majority of the subjects have moderate to very

severe level of premenstrual syndrome and very few of the subjects have very severe level of premenstrual syndrome in control and experimental group.

However in control group the posttest shows no deviation from the pretest, 14 (46.7%) subjects have moderate level of premenstrual syndrome, 14 (46.7%) subjects have severe level of premenstrual syndrome, 2 (6.6%) subjects have very severe level of premenstrual syndrome and none of them have mild and moderate level of premenstrual syndrome. But in experimental group during post test, 4(13.3%) subjects have very mild level of premenstrual syndrome and most of the subjects 26(86.7%) have mild level of premenstrual syndrome and none of the subjects have moderate, severe and very severe level of premenstrual syndrome.

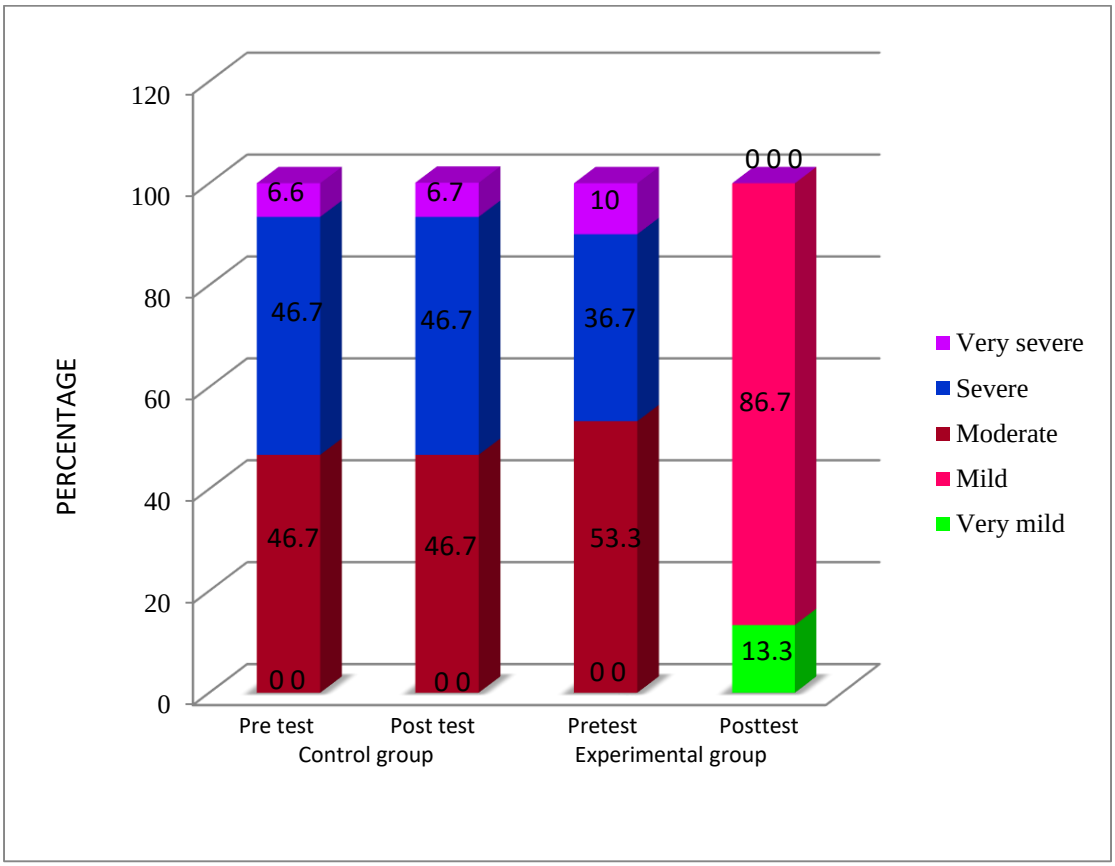


Fig.4- Distribution of samples based on level of premenstrual syndrome in control group and experimental group.

Table-4.3.2: Comparison of pretest and posttest mean score of premenstrual syndrome in control group.

(n=30)

Group	Pre test		Post test		Mean difference	"t" value	P value
	Mean	SD	Mean	SD			
Control group	110.2	15.1	109.13	14.4	1.1	1.89	0.052

Table-4.3.2 portrays the comparison of pretest and posttest mean scores of premenstrual syndrome in control group.

The above table conveys that, in control group, pretest mean score is (110.2 ± SD 15.1) the posttest mean score is (109.13 ±14.4), the mean difference is 1.1, obtained "t" value is 1.89 and which is not statistically significant.

The finding proclaims that, there is no difference between the pretest and posttest mean score of premenstrual syndrome in control group.

Table-4.3.3: Comparison of pretest and posttest mean score of premenstrual syndrome in experimental group.

(n=30)

Group	Pre test		Post test		Mean difference	"t" value	P value
	Mean	SD	Mean	SD			
Experimental group	111	20.0	55.13	9.55	55.86	15.30	P<0.001***

P<0.001*** – Highly significant

Table-4.3.3 evidence the comparison of pretest and posttest mean scores of premenstrual syndrome in experimental group.

The above table reports that, in experimental group, the pretest mean score is (111 ± SD 20.0), the posttest mean score is (55.13 ± SD 9.55), the mean difference is 55.86, obtained "t" value is 15.30, which is statistically highly significant at P<0.001*** level.

The results indicate that, there is significant difference between the pretest and posttest mean scores of premenstrual syndrome in experimental group. Hence, the researcher accepts the research hypothesis (H_1).

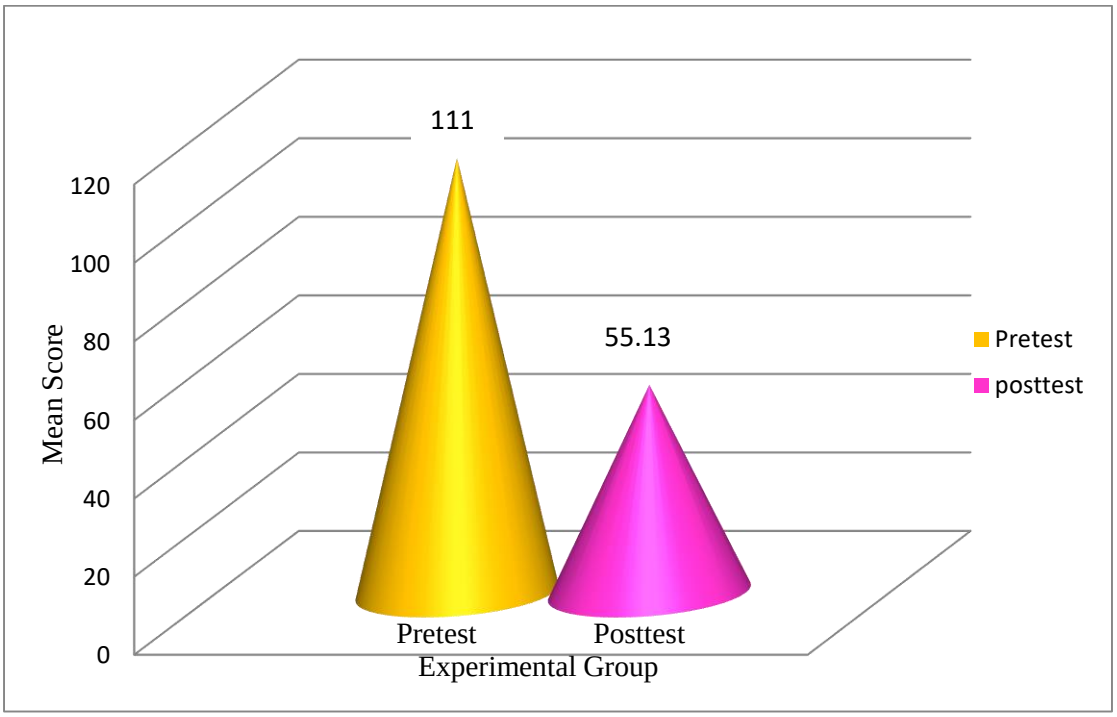


Fig.5- Comparison of pretest and posttest mean scores of premenstrual syndrome in experimental group.

Table-4.3.4: Comparison of posttest means scores of premenstrual syndrome between the control and experimental group.

(n=30)

Control group post test		Experimental group post test		Mean difference	"t" value	P value
Mean	**SD**	**Mean**	**SD**			
109.13	14.4	55.13	9.55	54	17.09	P<0.001***

P<0.001*** – Highly significant

Table-4.3.4 declares the comparison of posttest means scores of premenstrual syndrome between the control and experimental group.

The above table discloses that, in control group posttest mean score is (109.13 ± SD 14.4). In experimental group posttest mean score is (55.13± SD 9.55), the mean difference is 54, obtained "t" value is 17.09, which is statistically highly significant at P<0.001*** level.

The result communicates that, there is a significant difference in the posttest mean scores of premenstrual syndrome between the control and experimental group. Hence, the researcher accepts the research hypothesis (H_2).

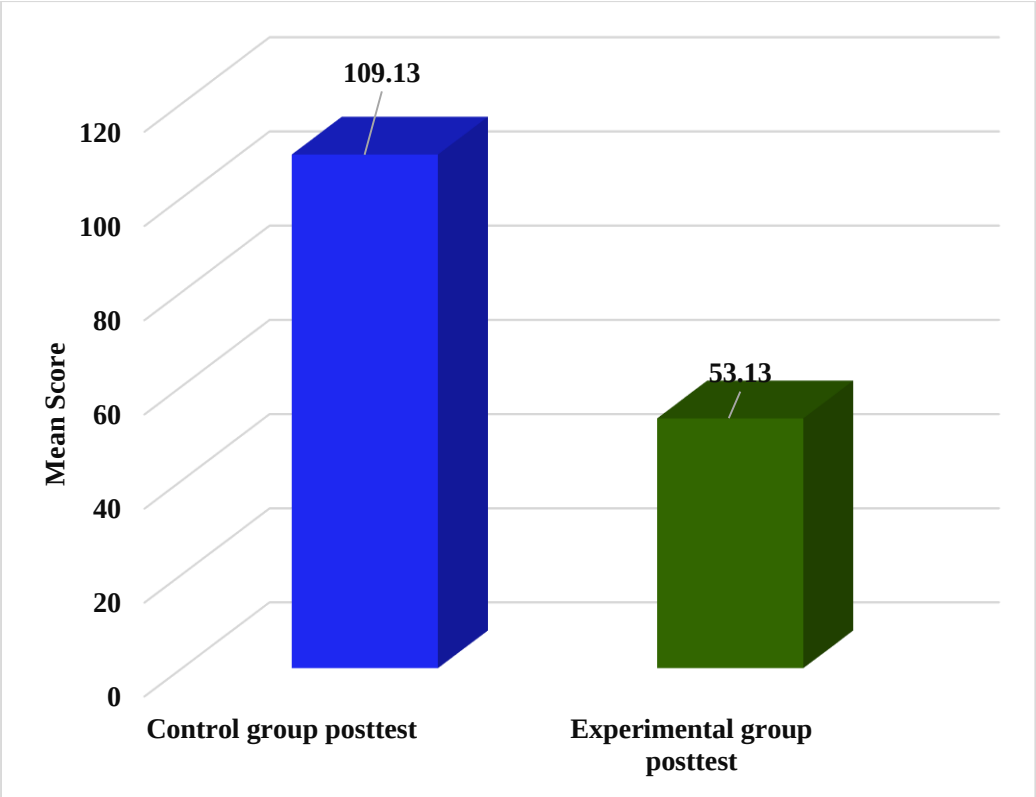


Fig.6- Comparison of posttest means scores of premenstrual syndrome between the control and experimental group.

SECTION- IV

Table-4.4.1: Association between pretest levels of premenstrual syndrome in experimental group and demographic variables.

(n=30)

Demographic variables	Control group Level of premenstrual syndrome						
	Very mild	Mild	Moderate	Severe	Very severe	χ^2 (df)	P value (N/NS)
1.Age (in years)							
12 years	0	0	3	4	0	4.13	0.389
13 years	0	0	4	6	0	(df=4)	NS
14 years	0	0	7	4	2		
2.Religion							
Hindu	0	0	13	12	0		
Muslim	0	0	0	0	0	10.97	0.004*
Christian	0	0	1	2	2	(df=2)	S
Others	0	0	0	0	0		
3. Type of family							
Nuclear family	0	0	12	11	2	0.68	0.710
Joint family	0	0	2	3	0	(df=2)	NS
4.Monthly family income							
<3000	0	0	4	4	0		
3001-5000	0	0	5	5	2	3.21	0.782
5001-10000	0	0	4	4	0	(df=6)	NS
>10000	0	0	1	1	0		
5. Type of Residence							
Urban	0	0	4	8	1	2.36	0.306
Rural	0	0	10	6	1	(df=2)	NS
6.Diet							
Vegetarian	0	0	3	3	0	0.54	0.765
Non vegetarian	0	0	11	11	2	(df=2)	NS

7.Weight (in Kg)							
Below 30 kg	0	0	4	2	0		
31-35 kg	0	0	5	6	0	8.03	0.236
36-40 kg	0	0	3	6	1	(df=6)	NS
41-45 kg	0	0	2	0	1		
46-50 kg	0	0	0	0	0		
Above 50kg	0	0	0	0	0		
8.Birth order							
First child	0	0	3	3	1	3.14	0.535
Second child	0	0	9	6	1	(df=4)	NS
Third and above	0	0	2	5	0		
9. Educational status of the mother							
Primary	0	0	2	5	0		
High school	0	0	3	7	2	11.14	0.194
Higher secondary	0	0	7	2	0	(df=8)	NS
Graduate	0	0	1	0	0		
Illiterate	0	0	1	0	0		
10.Type of beverage which you take often							
Coffee	0	0	7	6	1		
Tea	0	0	5	4	1	1.87	0.931
Milk	0	0	1	3	0	(df=6)	NS
Fruit juice	0	0	1	1	0		
None	0	0	0	0	0		
11.Regular physical exercise							
Yes	0	0	0	0	0	0	1
No	0	0	14	14	2	(df=1)	NS

12.How many hours you sleep per day							
<5 hours	0	0	2	2	1		
5-7 hours	0	0	3	5	1	5.48	0.484
8-10 hours	0	0	7	7	0	(df=6)	NS
>10 hours	0	0	2	0	0		
13.When you attained menarche							
<12 years	0	0	8	12	0	6.85	0.032*
>12 years	0	0	6	2	2	(df=2)	S
14.Frequency of menstrual cycle							
26-28 days	0	0	6	9	0		
29-31 days	0	0	5	4	2	5.51	0.239
32-34 days	0	0	3	1	0	(df=4)	NS
Above 35 days	0	0	0	0	0		
15.Menstrual flow in days							
2-4 days	0	0	3	4	2	5.17	0.075
5-7 days	0	0	11	10	0	(df=2)	NS
8-10 days	0	0	0	0	0		
16.How many pads changed /day							
Less than 4 pads	0	0	8	7	1	0.357	0.986
4-5 pads	0	0	5	6	1	(df=4)	NS
More than 5 pads	0	0	1	1	0		
17. Family History of premenstrual syndrome							
Present	0	0	7	10	1	1.43	0.490
Absent	0	0	7	4	1	(df=2)	NS
18.How many days premenstrual syndrome							
1-3 Days	0	0	11	9	2		
4-6 days	0	0	3	5	0	1.51	0.470
7-10 days	0	0	0	0	0	(df=2)	NS
>10 days	0	0	0	0	0		

NS - Not significant, S*- significant

Table-4.4.1 conveys the association between pretest levels of premenstrual syndrome in control group and demographic variables. The above findings concludes that there is an association between pretest level of premenstrual syndrome in control group with the selected demographic variables such as religion and age at menarche. Hence, the researcher accepts the research hypothesis (H_3).

Table-4.4.2: Association between pretest levels of premenstrual syndrome in experimental group and demographic variables.

(n=30)

Demographic variables	Experimental group Level of premenstrual syndrome						
	Very mild	Mild	Moderate	Severe	Very severe	χ^2 (df)	P value (N/NS)
1.Age (in years)							
12 years	0	0	4	4	0		
13 years	0	0	8	1	1	6.49	0.165
14 years	0	0	4	6	2	(df=4)	NS
2.Religion							
Hindu	0	0	8	8	3		
Muslim	0	0	1	1	0	3.96	0.411
Christian	0	0	7	2	0	(df=4)	NS
Others	0	0	0	0	0		
3. Type of family							
Nuclear family	0	0	11	9	1	2.66	0.264
Joint family	0	0	5	2	2	(df=2)	NS
4.Monthly family income (In rupees)							
<3000	0	0	6	3	2	5.15	0.525
3001-5000	0	0	5	6	0	(df=6)	NS
5001-10000	0	0	2	1	1		
>10000	0	0	3	1	0		
5. Type of Residence							
Urban	0	0	14	7	0	9.45	0.008*
Rural	0	0	2	4	3	(df=2)	S
6.Diet							
Vegetarian Non	0	0	2	1	0	0.45	0.797
vegetarian	0	0	14	10	3	(df=2)	NS

7.Weight (in kg)							
Below 30 kg	0	0	7	4	0		
31-35 kg	0	0	6	1	1	13.54	0.095
36-40 kg	0	0	0	3	2	(df=8)	NS
41-45 kg	0	0	2	3	0		
46-50 kg	0	0	1	0	0		
Above 50kg	0	0	0	0	0		
8.Birth order							
First child	0	0	5	5	0		
Second child	0	0	8	6	2	4.36	0.359
Third and above	0	0	3	0	1	(df=4)	NS
9. Educational status of the mother:							
Primary	0	0	4	4	2		
High school	0	0	10	4	0	7.02	0.321
Higher secondary	0	0	1	1	1	(df=6)	NS
Graduate	0	0	1	2	0		
Illiterate	0	0	0	0	0		
10.Type of beverage which you take often							
Coffee	0	0	6	5	2		
Tea	0	0	8	5	0	3.05	0.550
Milk	0	0	2	1	1	(df=4)	NS
Fruit juice	0	0	0	0	0		
None	0	0	0	0	0		
11.Regular physical exercise							
Yes	0	0	0	0	0	0	1
No	0	0	16	11	3	(df=1)	NS
12.How many hours you sleep per day							
<5 hours	0	0	3	2	0		
5-7 hours	0	0	6	5	3	4.01	0.675
8-10 hours	0	0	5	3	0	(df=6)	NS
>10 hours	0	0	2	1	0		

13.When you attained menarche							
<12 years	0	0	12	6	0	6.13	0.047*
>12 years	0	0	4	5	3	(df=2)	S
14.Frequency of menstrual cycle							
26-28 days	0	0	5	2	0		
29-31 days	0	0	10	6	1	7.71	0.260
32-34 days	0	0	1	2	1	(df=6)	NS
Above 35 days	0	0	0	1	1		
15.Menstrual flow in days							
2-4 days	0	0	9	4	2	11.81	0.019*
5-7 days	0	0	7	7	0	(df=4)	S
8-10 days	0	0	0	0	1		
16.How many pads changed per day							
Less than 4 pads	0	0	12	7	2	2.59	0.628
4-5 pads	0	0	2	3	0	(df=4)	NS
More than 5 pads	0	0	2	1	1		
17.Family history of premenstrual syndrome:							
Present	0	0	10	9	3	2.45	0.293
Absent	0	0	6	2	0	(df=2)	NS
18.How many days premenstrual syndrome							
1-3 Days	0	0	13	6	1		
4-6 days	0	0	3	2	1	6.18	0.186
7-10 days	0	0	0	3	1	(df=4)	NS
>10 days	0	0	0	0	0		

NS - Not significant, S*- Significant

Table-4.4.2 conveys the association between pretest levels of premenstrual syndrome in experimental group and demographic variables.

The above findings concludes that there is an association between pretest means score of premenstrual syndrome in experimental group with the selected demographic variables such as residence of area, age at menarche and menstrual flow in days. Hence, the researcher accepts the research hypothesis (H_3).

CHAPTER V

DISCUSSION

This chapter discusses the findings of the analysis in relation to the objectives of the study. The main aim of the present study is to evaluate the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in C.S.I Girls Higher Secondary School, Madurai.

The study was conducted by using quasi experimental pre test posttest control group design. The total sample size was 60, 30 subjects in control group and 30 subjects in experimental group were selected.

The modified Pre Menstrual Syndrome Scale was used to assess the level of premenstrual syndrome among adolescent girls.

The responses were analyzed by using descriptive statistics (Mean, Standard deviation, Frequency, Percentage) and inferential statistics (Paired "t" test, unpaired "t" test and chi-square). Discussions on the findings were arranged based on the objectives and hypothesis.

OBJECTIVES

1) To assess the pretest and posttest level of premenstrual syndrome among adolescent girls in control and experimental group.
2) To determine the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in experimental group.
3) To find out the association between the level of premenstrual syndrome among adolescent girls with the selected demographic variables in control and experimental group.

HYPOTHESES

H_1: The mean posttest score of premenstrual syndrome is significantly lesser than the mean pretest score of premenstrual syndrome among adolescent girls in experimental group.

H_2: The mean posttest score of premenstrual syndrome is significantly lesser in experimental group than the mean posttest score of premenstrual syndrome among adolescent girls in control group.

H_3: There is a significant association between the level of premenstrual syndrome with the selected demographic variables in control and experimental group.

Distribution of samples based on their demographic variables (Table 4.1.1)

- Majority 13(43.3%) of the subjects in control group and 12(40%) subjects in experimental group are in the age group of 14 years.
- Majority 25(83.3%) of the subjects in control group and 19(63.3%) subjects in the experimental group belong to Hindu religion.
- Majority 25(83.3%) of the subjects in the control group and 21(70%) subjects in the experimental group belong to the nuclear family.
- Majority 12(40%) of the subjects in the control group and 11(36.7%) subjects in the experimental group are getting Rs 3001-5000 per month.
- Majority 17(56.7%) of the subjects in control group residing at rural area and in contrast 21(70%) subjects are residing at urban area in experimental group.
- Majority 24(80%) of the subjects in the control group and 27(90%) subjects in the experimental group take non-vegetarian diet.
- Majority 11(36.7%) of the subjects in the control group have weighing between 31-35 kg, but in contrast 11(36.7%)subjects in the experimental group have weighing below 30 kg.

- Majority 16(53.3%) of the subjects in control and experimental group are placed as a second child.
- Majority 12(40%) of the subjects in the control group and 14(46.7%) subjects in the experimental group mothers have up to high school education.
- Majority 14(46.7%) of the subjects in the control group reports that they take coffee, but in contrast in experimental group 13(43.3%) subjects reports that they take coffee and tea.
- Nearly all the subjects, 30(100%) in control and experimental group report they did not follow any kind of regular exercises.
- Majority 14(46.7%) of the subjects in the control group report 8-10 hours sleep per day, but in contrast 14(46.7%) subjects in experimental group report 5-7 hours sleep per day respectively.
- Majority 20(66.7%) of the subjects in control group and 18(60%) subjects in experimental group are attained menarche before 12 years of age.
- Majority 15(50%) of the subjects in control group have 26-28 days frequency of menstrual cycle, but in contrast 17(56.7%) subjects in experimental group have 29-31 days frequency of menstrual cycle.
- Majority 21(70%) of the subjects in control group have 5-7 days of menstrual flow, but in contrast 15(50%) subjects in experimental group have 2-4 days of menstrual flow.
- Majority 16(53.3%) of the subjects in control group and 21(70%) subjects in experimental group are reported that, they change less than 4 pads per day.
- Majority 18(60%) of the subjects in control group and 22(73.3%) subjects in experimental group are having family history of premenstrual syndrome.
- Majority 22(73.3%) of the subjects in control group and 20(66.7%) subjects in experimental group have 1-3 days of premenstrual syndrome.

The first objective of the study is to assess the pretest and posttest level of premenstrual syndrome among adolescent girls in control and experimental group. (Table 4.2.1, 4.2.2, 4.2.3 and 4.3.1)

Table-4.2.1 depicts the pretest-posttest mean score of premenstrual syndrome in control group.

The premenstrual syndrome is categorized into four components namely, physical, psychological, behavioral and psychosocial components.

In control group, pretest mean score of physical component is (31.5 ± SD 6.07) and posttest mean score is (30.77 ± SD 7.34). Pretest mean score of psychological component is (29.03 ± SD 5.88), and posttest mean score is (29.01 ± SD 5.43). Pretest mean score of behavioral component is (29.57 ± SD 5.41), and posttest mean score is (29.33 ± SD 5.10). Pretest mean score of psychosocial component is (20.13 ± SD 3.38), and posttest mean score is (19.97 ± SD 3.08). The overall control group pretest mean score is (110.2 ± SD 15.1), and posttest mean score is (109.13 ± SD 14.4).

Since the intervention is not given for control group. There is no difference between pretest and posttest.

Table-4.2.2 reveals the pretest-posttest mean score of premenstrual syndrome in experimental group.

In experimental group, pretest mean score of physical component is (32.4 ± SD 6.76) and posttest mean score is (17.33 ± SD 4.08). Pretest mean score of psychological component is (29.7 ± SD 6.86), and posttest mean score is (14.6 ± SD 3.01). Pretest mean score of behavioral component is (29.3 ± SD 5.76), and posttest mean score is (14.2 ± SD 3.12). Pretest mean score of psychosocial component is (19.5 ± SD 4.92), posttest mean score is (9 ± SD 2.03). The overall experimental

group pretest mean score is (111 ± SD 20.0), and posttest mean score is (55.13 ± SD 9.55).

The researcher concludes that there is a reduction in the mean score of all the components of premenstrual syndrome in experimental group posttest than the pretest. So the researcher assumes that since the experimental group subjects regularly practicing of Jacobson muscle relaxation therapy, the posttest mean score is lesser than the pretest mean score.

Table-4.2.3 expresses the posttest mean score of premenstrual syndrome in control and experimental group.

Control group, posttest mean score of physical component is (30.77 ± SD 7.34) and experimental group, posttest mean score of physical component is (17.33 ± SD 4.08). Control group, posttest mean score of psychological component is (29.01 ± SD 5.43) and experimental group, posttest mean score of psychological component is (14.6 ± SD 3.01). Control group, posttest mean score of behavioral component is (29.33 ± SD 5.10) and experimental group, posttest mean score of behavioral component is (14.2 ± SD 3.12). Control group, posttest mean score of psychosocial component is (19.97 ± SD 3.08) and experimental group, posttest mean score of psychosocial component is (9 ± SD 2.03). The overall control group posttest mean score is (109.13 ± SD 14.4) and the overall experimental group posttest mean score is (55.13 ± SD 9.55)

The researcher concludes that there is no reduction in the mean score of all the components of premenstrual syndrome in control group posttest than experimental group posttest. The researcher assumes that since the intervention is not given for control group, there is no reduction in the level of premenstrual syndrome.

Table-4.3.1 explains the distribution of samples based on level of premenstrual syndrome in control and experimental group.

In control group during pretest, 14 (46.7%) subjects have moderate level of premenstrual syndrome, 14(46.7%) subjects have severe level of premenstrual syndrome, 2 (6.6%) subjects have very severe level of premenstrual syndrome and none of the subjects have very mild and mild level of premenstrual syndrome. But in experimental group during pre test, 16(53.3%) subjects have moderate level of premenstrual syndrome, 11(36.7%) subjects have severe level of premenstrual syndrome, 3(10%) subjects have very severe level of premenstrual syndrome and none of the subjects have very mild and mild level of premenstrual syndrome. The distribution exposes that, in pretest, majority of the subjects have moderate to very severe level of premenstrual syndrome in control and experimental group.

However in control group the posttest shows no deviation from the pretest, 14 (46.7%) subjects have moderate level of premenstrual syndrome, 14 (46.7%) subjects have severe level of premenstrual syndrome, 2 (6.6%) subjects have very severe level of premenstrual syndrome and none of them have mild and moderate level of premenstrual syndrome. But in experimental group during post test, 4(13.3%) subjects have very mild level of premenstrual syndrome and most of the subjects 26(86.7%) have mild level of premenstrual syndrome and none of the subjects have moderate, severe and very severe level of premenstrual syndrome.

The researcher assumes that since the experimental group have regularly practicing the Jacobson muscle relaxation therapy, the level of premenstrual syndrome is lesser than the control group.

The above finding concludes that there is a reduction in the posttest level of premenstrual syndrome than the pretest level of premenstrual syndrome in the

experimental group. But there is no difference found between the pretest and posttest level of premenstrual syndrome in control group.

This finding was supported by Jutta Kran, (2012) conducted an experimental study in Germany among 55 adolescent girls (14-19 years) with primary dysmenorrhea. Subjects were selected randomization method and assigned to 30 in experimental group and 25 in control group. Experimental group practiced Jacobson's relaxation technique for 30-40 minutes for 21 days and no intervention was given for control group. The result revealed that Jacobson's relaxation was highly effective in reducing the menstrual pain during the primary dysmenorrhea in experimental group.

The second objective of the study is to determine the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in experimental group (Table 4.3.2, 4.3.3, 4.3.4)

Table-4.3.2 portrays the comparison of pretest and posttest mean scores of premenstrual syndrome in control group.

In control group, pretest mean score is (110.2 ± SD 15.1) the posttest mean score is (109.13 ± SD 14.4), the mean difference is 1.1, the obtained "t" value is 1.89 and which is not statistically significant.

The finding proclaims that, there is no difference between the pretest and posttest mean score of premenstrual syndrome in control group.

Table-4.3.3 evidence the comparison of pretest and posttest mean scores of premenstrual syndrome in experimental group.

In experimental group, the pretest mean score is (111 ± SD 20.0), the posttest mean score is (55.13 ± SD 9.55), the mean difference is 55.86, the obtained "t" value is 15.30 and which is statistically highly significant.

The results indicate that, there is significant difference between the pretest and posttest mean scores of premenstrual syndrome in experimental group. Hence, the researcher accepts the research hypothesis (H_1).

Table-4.3.4 declares the comparison of posttest means scores of premenstrual syndrome between the control and experimental group.

In control group posttest mean score is (109.13 ± SD 14.4). In experimental group posttest mean score is (55.13 ± SD 9.55), the mean difference is 54, the obtained "t" value is 17.09 and which is statistically highly significant at P<0.001*** level.

The result communicates that, there is a significant difference in the posttest mean scores of premenstrual syndrome between the control and experimental group. Hence, the researcher accepts the research hypothesis (H_2).

From the above findings, the researcher concludes that the Jacobson muscle relaxation therapy had reduced the level of premenstrual syndrome in experimental group. Since the control group had not practiced the intervention, there is no reduction in the level of premenstrual syndrome in control group.

This study was congruent by Uma Ramani.R (2012) performed a study on the effect of Jacobson muscle relaxation technique on social anxiety among adolescent girls in C.M.S. Matriculation higher secondary school, Coimbatore. The study revealed that 80% of adolescent girls had mild social anxiety and 20% had moderate anxiety before intervention. The social anxiety level was found to be lesser after the Jacobson muscle relaxation technique among adolescent girls in experimental group. Finally the researcher concluded that the Jacobson muscle relaxation technique can be used as a mechanism to reduce social anxiety and the researcher suggested to practice

Jacobson muscle relaxation therapy which will help to overcome personal and social problems.

The third objective of the study is to find out the association between the level of premenstrual syndrome among adolescent girls with the selected demographic variables in control and experimental group (Table 4.4.1, 4.4.2)

Table-4.4.1 conveys the association between pretest levels of premenstrual syndrome in control group and demographic variables. Concludes that there is a association between pretest means score of premenstrual syndrome in control group with the selected demographic variables such as religion and age at menarche at $P<0.05$ level. Hence, the researcher accepts the research hypothesis (H_3).

Table-4.4.2 conveys the association between pretest levels of premenstrual syndrome in experimental group and demographic variables.

There is a association between pretest means score of premenstrual syndrome in experimental group with the selected demographic variables such as residing area, age at menarche and menstrual flow in days, which is statistically significant. Hence, the researcher accepts the research hypothesis (H_3).

Finally the researcher concludes based on the literature that, prevalence rate of premenstrual syndrome was higher in women whose menarcheal age is less than 11 years.

This findings was supported by, Aditya Prasad Sharkar, et al (2014), conducted a study to identify the premenstrual syndrome problems among adolescent girls in a rural school of West Bengal, India. The Result revealed that, premenstrual syndrome was reported by 61.5% of girls. Based on the American College Of Obstetrician and Gynecologist (ACOG) criteria 62.7% girls reported depression and 70.5% girls reported anger and 84.8% reported irritability. Anxiety and confusion

were reported by 70.0% and 66.8% adolescent girls, respectively. Around one-third of girls experienced breast pain, and 53.3% girls faced social rejection during that period. Head ache and abdominal distention were reported by around 55% girls. Only 14.7% of them reported limb swelling premenstrual period. premenstrual syndrome was found to be associated with mother's occupation, amount of blood flow during menstruation, and the presence of dysmenorrhea.

The study findings revealed that, residing area, religion, age at menarche and menstrual flow in days were the important factors that might affect the level of premenstrual syndrome.

CHAPTER VI

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter contains a brief account of the present study, the conclusions are drawn from the findings and the implications of the results. The recommendations are given for different areas like Nursing service, Nursing education, Nursing administration and Nursing research.

SUMMARY

The primary aim of the present study is to assess the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in C.S.I. Girls Higher Secondary School at Madurai.

The objectives of the study are

1) To assess the pretest and posttest level of premenstrual syndrome among adolescent girls in control and experimental group.
2) To determine the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in experimental group.
3) To find out the association between the level of premenstrual syndrome among adolescent girls with the selected demographic variables in control and experimental group.

The research hypotheses stated are

H_1: The mean posttest score of premenstrual syndrome is significantly lesser than the mean pretest score of premenstrual syndrome among adolescent girls in experimental group.

H_2: The mean posttest score of premenstrual syndrome is significantly lesser in experimental group than the mean posttest score of premenstrual syndrome among adolescent girls in control group.

H_3: There is a significant association between the level of premenstrual syndrome with the selected demographic variables in control and experimental group.

The extensive review of literature enabled the researcher to develop the conceptual framework, tool and methodology. Literature review was organized as follows.

- Studies related to premenstrual syndrome among adolescent girls.
- Studies related to Jacobson muscle relaxation therapy on premenstrual syndrome

The conceptual framework of this study was based on Orlando's Nursing process model. The research design adopted for this study was quasi experimental pre test-posttest control group design. Independent variable in the study is Jacobson muscle relaxation therapy and dependent variable is premenstrual syndrome among adolescent girls.

Modified Premenstrual syndrome Scale was used after confirming the validity and reliability. The pilot study was conducted among six adolescent girls. The study was found to be feasible, practicable and reliable to continue the main study.

The study was conducted at C.S.I Girls Higher Secondary School at Madurai. Non-probability purposive sampling technique was used to select the samples. Total sample size was 60, 30 in control group and 30 in experimental group. The objectives and purpose of the study were explained and confidentiality was maintained. Pre test assessment was done using the Modified Premenstrual syndrome Scale and the Jacobson muscle relaxation therapy was demonstrated to the experimental group for a

period of 28 days. Posttest assessment was done with same Modified Premenstrual syndrome Scale.

The collected data were analyzed and interpreted using both descriptive statistics (Mean, frequency, standard deviation and mean percentage) and inferential statistics (Paired "t" test, unpaired "t" test and chi-square).

MAJOR FINDINGS OF THE STUDY

Regarding frequency and percentage wise distribution of samples based on the demographic variables in control and experimental group.

- Majority 13(43.3%) of the subjects in control group and 12(40%) subjects in experimental group are in the age group of 14 years.
- Majority 25(83.3%) of the subjects in control group and 19(63.3%) subjects in the experimental group belong to Hindu religion.
- Majority 25(83.3%) of the subjects in the control group and 21(70%) subjects in the experimental group belong to the nuclear family.
- Majority 12(40%) of the subjects in the control group and 11(36.7%) subjects in the experimental group are getting Rs 3001-5000 per month.
- Majority 17(56.7%) of the subjects in control group residing at rural area and in contrast 21(70%) subjects are residing at urban area in experimental group.
- Majority 24(80%) of the subjects in the control group and 27(90%) subjects in the experimental group take non-vegetarian diet.
- Majority 11(36.7%) of the subjects in the control group have weighing between 31-35 kg, but in contrast 11(36.7%)subjects in the experimental group have weighing below 30 kg.
- Majority 16(53.3%) of the subjects in control and experimental group are placed as a second child.

- Majority 12(40%) of the subjects in the control group and 14(46.7%) subjects in the experimental group mother have up to high school education.
- Majority 14(46.7%) of the subjects in the control group report that they take coffee, but in contrast in experimental group 13(43.3%) subjects reports that they take coffee and tea.
- Nearly all the subjects, 30(100%) in control and experimental group report they did not follow any kind of regular exercises.
- Majority 14(46.7%) of the subjects in the control group report 8-10 hours sleep per day, but in contrast 14(46.7%) subjects in experimental group report 5-7 hours sleep per day respectively.
- Majority 20(66.7%) of the subjects in control group and 18(60%) subjects in experimental group are attained menarche before 12 years of age.
- Majority 15(50%) of the subjects in control group have 26-28 days frequency of menstrual cycle, but in contrast 17(56.7%) subjects in experimental group have 29-31 days frequency of menstrual cycle.
- Majority 21(70%) of the subjects in control group have 5-7 days of menstrual flow, but in contrast 15(50%) subjects in experimental group have 2-4 days of menstrual flow.
- Majority 16(53.3%) of the subjects in control group and 21(70%) subjects in experimental group are reported that, they change less than 4 pads per day.
- Majority 18(60%) of the subjects in control group and 22(73.3%) subjects in experimental group are having family history of premenstrual syndrome.
- Majority 22(73.3%) of the subjects in control group and 20(66.7%) subjects in experimental group have 1-3 days of premenstrual syndrome.

Regarding pretest and posttest level of premenstrual syndrome among adolescent girls

The premenstrual syndrome is categorized into four components namely, physical, psychological, behavioral and psychosocial components.

In control group, pretest mean score of physical component is (31.5 ± SD 6.07) and posttest mean score is (30.77 ± SD 7.34). Pretest mean score of psychological component is (29.03± SD 5.88), and posttest mean score is (29.01± SD 5.43). Pretest mean score of behavioral component is (29.57± SD 5.41), and posttest mean score is (29.33± SD 5.10). Pretest mean score of psychosocial component is (20.13± SD 3.38), and posttest mean score is (19.97± SD 3.08). The overall control group pretest mean score is (110.2± SD 15.1), and posttest mean score ± Standard Deviation is (109.13± SD 14.4).

In experimental group, pretest mean score of physical component is (32.4± SD 6.76) and posttest mean score is (17.33 ± SD 4.08). Pretest mean score of psychological component is (29.7 ± SD 6.86), and posttest mean score ± Standard Deviation is (14.6± SD 3.01). Pretest mean score of behavioral component is (29.3± SD 5.76), and posttest mean score is (14.2± SD 3.12). Pretest mean score of psychosocial component is (19.5± SD 4.92), and posttest mean score is (9± SD 2.03). The overall experimental group pretest mean score is (111± SD 20.0), and posttest mean score is (55.13± SD 9.55).

In Control group, posttest mean score of physical component is (30.77± SD 7.34) and experimental group, posttest mean score of physical component is (17.33± SD 4.08). Control group, posttest mean score of psychological component is (29.01± SD 5.43) and experimental group, posttest mean score of psychological component is (14.6 ± SD 3.01). Control group, posttest mean score of behavioral component is

(29.33± SD 5.10) and experimental group, posttest mean score of behavioral component is (14.2± SD 3.12). Control group, posttest mean score of psychosocial component is (19.97±3.08) and experimental group, posttest mean score of psychosocial component is (9 ± SD 2.03). The overall control group posttest mean score is (109.13 ± SD 14.4) and the overall experimental group posttest mean score is (55.13± SD 9.55)

In control group during pretest, 14 (46.7%) subjects have moderate level of premenstrual syndrome, 14(46.7%) subjects have severe level of premenstrual syndrome, 2 (6.6%) subjects have very severe level of premenstrual syndrome and none of the subjects have very mild and mild level of premenstrual syndrome. But in experimental group during pre test, 16(53.3%) subjects have moderate level of premenstrual syndrome, 11(36.7%) subjects have severe level of premenstrual syndrome, 3(10%) subjects have very severe level of premenstrual syndrome and none of the subjects have very mild and mild level of premenstrual syndrome. The distribution exposes that, in pretest, majority of the subjects have moderate to very severe level of premenstrual syndrome in control and experimental group.

However in control group the posttest shows no deviation from the pretest, 14 (46.7%) subjects have moderate level of premenstrual syndrome, 14 (46.7%) subjects have severe level of premenstrual syndrome, 2 (6.6%) subjects have very severe level of premenstrual syndrome and none of them have mild and moderate level of premenstrual syndrome. But in experimental group during post test, 4(13.3%) subjects have very mild level of premenstrual syndrome and most of the subjects 26(86.7%) have mild level of premenstrual syndrome and none of the subjects have moderate, severe and very severe level of premenstrual syndrome.

Regarding distribution of samples based on level of premenstrual syndrome in adolescent girls

In control group during pretest, 14 (46.7%) subjects have moderate level of premenstrual syndrome, 14(46.7%) subjects have severe level of premenstrual syndrome, 2 (6.6%) subjects have very severe level of premenstrual syndrome and none of the subjects have very mild and mild level of premenstrual syndrome. But in experimental group during pre test, 16(53.3%) subjects have moderate level of premenstrual syndrome, 11(36.7%) subjects have severe level of premenstrual syndrome, 3(10%) subjects have very severe level of premenstrual syndrome and none of the subjects have very mild and mild level of premenstrual syndrome. The distribution exposes that, in pretest, majority of the subjects have moderate to very severe level of premenstrual syndrome in control and experimental group.

However in control group the posttest shows no deviation from the pretest, 14 (46.7%) subjects have moderate level of premenstrual syndrome, 14 (46.7%) subjects have severe level of premenstrual syndrome, 2 (6.6%) subjects have very severe level of premenstrual syndrome and none of them have mild and moderate level of premenstrual syndrome. But in experimental group during post test, 4(13.3%) subjects have very mild level of premenstrual syndrome and most of the subjects 26(86.7%) have mild level of premenstrual syndrome and none of the subjects have moderate, severe and very severe level of premenstrual syndrome.

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premenstrual syndrome, 11(36.7%) subjects have severe level of premenstrual syndrome, 3(10%) subjects have very severe level of premenstrual syndrome and none of the subjects have very mild and mild level of premenstrual syndrome, and none of the subjects have very mild and mild level of premenstrual syndrome. The distribution exposes that, in pretest, majority of the subjects have moderate to very severe level of premenstrual syndrome in control and experimental group.

However in control group the posttest shows no deviation from the pretest, 14 (46.7%) subjects have moderate level of premenstrual syndrome, 14 (46.7%) subjects have severe level of premenstrual syndrome, 2 (6.6%) subjects have very severe level of premenstrual syndrome and none of them have mild and moderate level of premenstrual syndrome. But in experimental group during post test, 4(13.3%) subjects have very mild level of premenstrual syndrome and 26(86.7%) subjects have mild level of premenstrual syndrome and none of the subjects have moderate, severe and very severe level of premenstrual syndrome.

Evaluate the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls

In control group, pretest mean score is (110.2± SD 15.1) the posttest mean score is (109.13± SD 14.4), the mean difference is 1.1, obtained "t" value is 1.89 and which is not statistically significant at P<0.05 level.

In experimental group, the pretest mean score is (111 ± SD 20.0), the posttest mean score is (55.13± SD 9.55), the mean difference is 55.86, obtained "t" value is 15.30 and which is statistically highly significant at P<0.001*** level.

In control group posttest mean score is (109.13± SD 14.4). In experimental group posttest mean score is (55.13± SD 9.55), the mean difference is 54, obtained "t" value is 17.09 and which is statistically highly significant at P<0.001*** level.

Association between the level of premenstrual syndrome with the selected demographic variables in control and experimental group.

There is a association between pretest means score of premenstrual syndrome in control group with the selected demographic variables such as religion and age at menarche at $P<0.05$ level.

There is a association between pretest means score of premenstrual syndrome in experimental group with the selected demographic variables such as residing of area, age at menarche and menstrual flow in days which is significant at $P<0.05$ level.

CONCLUSION

- Most of the adolescent girls have moderate, severe and very severe level of premenstrual syndrome.
- After the practice of Jacobson muscle relaxation therapy, level of premenstrual syndrome has decreased significantly in experimental group.
- The findings indicate that, Jacobson muscle relaxation therapy can be administered to the school going adolescent girls in reducing the level of premenstrual syndrome since it is affordable, comfortable and effective without any side effects.
- After the completion of the study, subjects in control group were taught about the Jacobson muscle relaxation therapy.

IMPLICATIONS

Implication is the conclusion that can be drawn from something although it is not explicitly stated. Nursing implication usually includes specific suggestions for nursing practice, education, administration and nursing research.

Nursing service

- The study findings can be disseminated to practicing nurses who will motivate the females to practice Jacobson muscle relaxation therapy in hospital especially in gynecological OPD.
- As members of the health care professional, everyone should equip themselves with various complementary and alternative therapies.
- The study reveals the fundamental responsibility of the O.B.G nurses to support the females on various gynecological problems to improve the well being of the females.
- Simple complementary therapies like Jacobson muscle relaxation therapy need little training. It can be easily incorporated into nursing care routine.
- The nurses can use this intervention to prevent further complications of premenstrual syndrome among females.

Nursing Education

- Nurse educators can improve the concepts of various relaxation techniques especially Jacobson muscle relaxation therapy for nursing students to manage their academic stress and anxiety.
- Students can demonstrate or utilize the video assisted teaching programme on Jacobson muscle relaxation therapy to give health education in various settings.
- As a part of reproductive assessment, nursing students need to be educated and trained to identify the premenstrual syndrome in community settings.
- Post graduate nursing students specialization in OBG should be trained to administer complementary and alternative therapies independently.

- Make available literatures related to Jacobson muscle relaxation therapy on premenstrual syndrome in the library for students reference.
- The various complimentary therapies for premenstrual syndrome can be included in the nursing curriculum.
- Nurse educators should encourage the nursing students to practice various complementary therapies along with the routine and standard nursing care.

Nursing Administration

- Nurse administrator should conduct in-service education programme for directing and motivating staff towards utilizing Jacobson muscle relaxation therapy.
- Nurse administrators need to prepare, manual and protocol for the assessment and management of the premenstrual syndrome.
- Administrators have to motivate the nurses to educate the reproductive age group women on the importance of practicing Jacobson muscle relaxation therapy.
- Periodic mass demonstration program to be arranged in the schools, industries, hospitals and community areas on various complementary therapies.
- In service education regarding premenstrual syndrome and the benefits of Jacobson muscle relaxation therapy should be educated to nursing personnel working in gynecological wards, outpatient department and in community settings.
- Short term certificate course on complementary and alternative therapy could be arranged for nurses to uplift their knowledge and practical skills.

- Nurse administrators can collaborate with the nursing researchers to conduct further research in utilization of complementary and alternative therapies.

Nursing research

- The necessity to conduct further research studies in developing countries like India to prove the effectiveness of Jacobson muscle relaxation therapy on reducing premenstrual syndrome.
- The study findings can be conveying through the Nursing conference, seminars, and by publications in professional, National, and International journals and web sites.
- The present study findings can be expanding in different disease conditions and operative procedures to promote the physiological and psychological well being.
- The study findings can be added to the research review regarding the effectiveness of Jacobson muscle relaxation therapy on reducing premenstrual syndrome.

LIMITATIONS

- The researcher faced difficulty to obtain permission for the study.
- The researcher faced difficulty to get co-operation from the samples.
- The study was limited to adolescent girls studying in selected school at Madurai.
- The researcher, assess the effectiveness of Jacobson muscle relaxation therapy only for few commonest premenstrual symptoms.

RECOMMENDATION

On the basis of the findings of the study following recommendations have been made.

- Jacobson muscle relaxation therapy should be practiced in schools especially for adolescent girls at regular basis.
- The study can be replicated with other settings.
- A similar study can be replicated on large sample to generalize the findings.
- The same study can be done with one group pre test posttest design.
- A comparative study can be carried out between the adolescent girls and other reproductive age group women.
- Jacobson muscle relaxation therapy can be replicated among women with post menopausal syndrome.

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APPENDIX – A

LETTER SEEKING PERMISSION TO CONDUCT THE RESEARCH STUDY

From

M.Gayathri,
II M. Sc Nursing Student,
C. S. I. Jeyaraj Annapackiam College of Nursing,
Madurai- 625004.

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To

Respected Sir/ Madam,

Sub: Seeking permission to conduct the research study- reg.

With due regards, I kindly bring to your notice that i am a post graduate student of the C. S. I. Jeyaraj Annapackiam College of Nursing, Madurai. I selected the below mentioned topic for dissertation to be submitted to the Tamil Nadu Dr. M. G. R. Medical
University, Chennai, as a part of partial fulfilment for the Master of Science in Nursing.

"A study to assess the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in C.S.I Girls Higher Secondary School at Madurai"

I would like to conduct my study in your esteemed institution. Hence I request kind me permission for the same.

Thanking you in anticipation,

Place: Madurai. Yours Sincerely,

Date: (M.GAYATHRI)

APPENDIX – B

LETTER SEEKING EXPERTS OPINION FOR CONTENT VALIDITY

From,

M.Gayathri,
II M. Sc Nursing Student,
C. S. I. Jeyaraj Annapackiam College of Nursing,
Madurai- 625004.

To,

Respected Sir/ Madam,

Sub: Requisition for opinion and suggestion of experts for establishing content validity of research tool-reg.

With due regards, I kindly bring to your notice that I am a post graduate student of the C. S. I. Jeyaraj Annapackiam College of Nursing, Madurai. I selected the below mentioned topic for dissertation to be submitted to the Tamil Nadu Dr. M. G. R. Medical
University, Chennai, as a part of partial fulfilment for the Master of Science in Nursing.

"A study to assess the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in C.S.I Girls Higher Secondary School at Madurai"

I am in need of your valuable opinions and suggestions regarding the tool which I have prepared. So I humbly request you to spare a little of your precious time to validate the tool, for which I will remain ever grateful to you.

Thanking you in anticipation,

Place: Madurai. Yours Sincerely,

Date: **(**M.GAYATHRI**)**

APPENDIX – C

LIST OF EXPERTS FOR CONTENT VALIDITY

Dr. (Mrs). YAZHINI SELVARAJ, M.B.B.S., FIMS., M.D., D.G.O.,
Oobstetrician & Gynecologist,
Ponni Hospital,
Narayanapuram, Madurai.

Prof. Dr. (Mrs). JOTHI SOPHIA, M.Sc (N)., Ph. D.,
Pricipal
C.S.I Jeyarai Annapaciam College of Nursing
Madurai.

Prof. Dr. (Mrs). MERLIN JEYAPAL, M.Sc(N),, Ph.D.,
Vice-Pricipal cum H.O.D of O.B.G nursing
C.S.I Jeyarai Annapaciam College of Nursing
Madurai

Prof. Dr. (Mrs). SHANTHI, M.Sc(N)., Ph.D.,
Vice-Pricipal,
Meenakshi College of Nursing,
Madurai.

Prof. REETA SOLOMON, M.Sc(N)., RN.RM.
Principal,
Thasiah College Of Nursing
Vellivilagam, Marthandam

Prof. MURUGALAKSHMI, M.Sc (N)., RN.RM.
HOD of O.B.G department
Sacred Heart Nursing College
Madurai

Prof. AARTHY SOODI, M.Sc (N)., RN.RM.
O.B.G department
Sacred Heart Nursing College
Madurai

Prof. KASTHURI, M.Sc(N)., RN.RM.
Principal
Sakthi College of Nursing,
Karur.

Prof. Dr. Y. JOHN SAM ARUN PRABU, M.Sc (N)., Ph. D.,
HOD of Community Department
C.S.I Jeyarai Annapaciam College of Nursing
Madurai

Prof. Dr. JANCY RACHEL DAISY, M.Sc (N), Ph.D.,
HOD of Mental Health Nursing department
C.S.I Jeyarai Annapaciam College of Nursing
Madurai

Prof. Dr. JESSIE METILDA, M.Sc (N), Ph.D.,
HOD of Child Health Nursing department
C.S.I JACON
Madurai

Dr.B.ANANTHAVALLI M.Sc.,M.A.,M.Phil.,Ph.D.,
Dtrector and Secretary
The Valliammal Institution
Madurai

Mr. Mani, M.Sc, M. Phil.,
Bio – statistician
Bangalore

APPENDIX- D

CERTIFICATE OF CONTENT VALIDATION

This is to certify that the tool developed by **Ms.** M.Gayathri, final year M.Sc Nursing student of C.S.I. Jeyaraj Annapackiam College Of Nursing, Madurai (affiliated to the Tamil Nadu Dr.M.G.R. Medical University) is validated by the undersigned and he can proceed with this tool and conduct the main study for dissertation entitled **"A study to assess the effectiveness of Jacobson muscle relaxation therapy on premenstrual syndrome among adolescent girls in C.S.I Girls Higher Secondary School, Madurai"**

Signature:

Name:

Designation:

Address:

Place:

Date:

APPENDIX-E

CERTIFICATE OF JACOBSON MUSCLE RELAXATION THERAPY COURSE

THE VALLIAMMAL INSTITUTION (TVI)

2/18A Upstairs, B.B. Road 2nd St., Pankajam Colony , Madurai-625 009.

✆ 98942 49630; 98430 40226 email: ananthibetsy@rediffmail.com

Reg. No. PCC/54/Feb. 18/339 Date: 03/03/18

Certificate Course in Basic Counselling Skills and Jacobson's Muscle Relaxation Technique

This is to certify that ..... M. GAYATHRI ..... *has completed our* **CERTIFICATE COURSE IN BASIC COUNSELLING SKILLS AND JACOBSON'S MUSCLE RELAXATION TECHNIQUE** (*24hrs Part-time Education Programme designed and offered by experts) by effectively participating in theory & practical classes and successfully completing all the exercises. She has been placed in First Class*

THE VALLIAMMAL INSTITUTION (TVI) 2/18A Upstairs, B.B. Road 2nd St., Pankajam Colony , Madurai-625 009 Ph: 4210258

Prof. Dr. S. Jeyapragasam M.Sc.,M.A.,M.A.,Ph.D.,
Director
Rajarajan Institute of Science (RISE)

3/03/2018

Dr. B. Ananthavalli M.Sc.,M.A.,M.Phil.,Ph.D.,
Director & Secretary
The Valliammal Institution (TVI)

APPENDIX – F

COPY OF TOOL FOR DATA COLLECTION IN ENGLISH AND TAMIL

SECTION 1: PREMENSTRUAL SYNDROME SCREENING TOOL

Instruction: In the following table, please indicate which of these symptoms you experience at least 4 days before your menstrual period.

S.No	symptoms	0	1	2	3
1	I feel depressed or hopeless				
2	I have headache				
3	I feel tearful or cry easily				
4	I feel on edge, angry, irritable, anxious or wired				
5	I have decreased interest in my usual activities				
6	I have difficulty in concentrating				
7	I feel easily fatigued ; I lack energy				
8	I have food cravings (salt, foods high in sugar or chocolate)				
9	I have trouble sleeping or sleep more than usual				
10	I feel overwhelmed or out of control				
11	I have breast tenderness				
12	I have a sensation of bloating or temporary weight gain				
13	I feel difficulty in academic performance				

SECTION 2: SOCIO- DEMOGRAPHIC DATA

Instruction

The participants are requested to read the socio-demographic data carefully, and requested encircle the appropriate answer.

1) Age in years
   a) 12 years
   b) 13 years
   c) 14 years

2) Religion
   a) Hindu
   b) Muslim
   c) Christian

3) Type of family
   a) Nuclear family
   b) Joint family

4) Family income / month (in rupees)
   a) Below 5,000
   b) 5,001 – 10,000
   c) 10,001 – 15,000
   d) Above 15,000

5) Type of residence
   a) Urban
   b) Rural

6) Diet
   a) Vegetarian
   b) Non vegetarian

7) Weight (in kg)

a) < 30 kg

b) 31-35 kg

c) 36- 40 kg

d) 41- 45 kg

e) 46-50 kg

f) Above 50 kg

8) Birth order

a) First child

b) Second child

c) Third child and above

9) Educational status of the mother

a) Primary school education

b) High school education

c) Higher secondary school education

d) Graduate

e) Illiterate

10) The type of beverage which you take often

a) Coffee

b) Tea

c) Milk

d) Fruit juice

e) None

11) Do you follow regular physical exercise?

a) Yes (specify ----------)

b) No

12) How many hours you sleep per day

a) < 5 hours

b) 5-7 hours

c) 8-10 hours

d) > 10 hours

13) When you attained menarche

a) < 12 years

b) >12years

14) Frequency of menstrual cycle

a) 26-28 days

b) 29-31 days

c) 32-34 days

d) Above 35 days

15) How many days you have menstrual flow

a) 2-4 days

b) 5-7 days

c) 8- 10 days

16) How many pads you changed / day

a) Less than 4 pads

b) 4-5pads

c) More than 5 pads

17) Family history of PMS

a) Present

b) Absent

18) How many days you have PMS

a) 1-3 days

b) 4-6 days

c) 7-10 days

d) > 10 days

SECTION 3: PREMENSTRUAL SYNDROME SCALE (PMSS)

Instruction:

The participants are requested to read the following symptoms carefully, and requested to tick (√) the appropriate answer.

PREMENSTRUAL SYNDROME	Never (1)	Rarely (2)	Sometimes (3)	Very often (4)	always (5)
PHYSICAL SYMPTOMS					
1. Breast tenderness					
2. Head ache					
3. Pelvic discomfort					
4.Joint and muscle pain					
5. Abdominal bloating					
6. Fatigue					
7. Fainting					
8. Nausea					
9. pimples					
10. Change in bowel habits					
11.Foodcravings (sugar/salt)					
PSYCHOLOGICAL SYMPTOMS					
12. Anxious					
13. Irritability					
14. Mood swings					
15. Lack of concentration					
16.Sleep pattern disturbance					
17. Depression					
18. Forgetfulness					
19. Confusion					
20.Easycrying					

BEHAVIORAL SYMPTOMS						
21. Obsessional thought						
22. Lack of self control						
23. Feeling guilt						
24. Irrational thought						
25. Poor judgment						
26. being over sensitive						
27. Restlessness						
28. Compulsive behavior						
29. Clumsiness						
PSYCHOSOCIAL SYMPTOMS						
30.Interfere academic activities						
31.Interfere relationship with friends, classmates and family						
32. Social withdrawal						
33.Less interest in activities at home						
34. Less interest in playing						
35.Missing school						

பகுதி 1

அறிவுறுத்தல்: மாதவிலக்கு காலத்திற்கு முன் ஏற்படும் அறிகுறிகள் கீழே கொடுக்கப்பட்டுள்ளன. அறிகுறிகளின் தீவிரத்தைப் பொறுத்து சரியான இடத்தில் (√) செய்க.

வ. எண்	அறிகுறிகள்	0	1	2	3
1.	நான் மன அழுத்தத்துடனும், நம்பிக்கை அற்றும் உணர்கிறேன்.				
2.	எனக்கு தலை வலிக்கிறது.				
3.	நான் சுலபமாக அழுது விடுகிறேன்/எனக்கு அதிகமாக அழுகை வருகிறது.				
4.	எனக்கு கோபம், எரிச்சல், பயம் மற்றும் மனச்சோர்வு எற்படுகிறது.				
5.	எனக்கு அன்றாடம் செய்யும் வேலைகளில் நாட்டம் குறைந்து காணப்படுகிறது.				
6.	எனக்கு கவனம் செலுத்துவதில் சிரமம் உள்ளது.				
7.	நான் சுலபமாக தளர்ச்சியடைவதாகவும், உடலில் பெலன் குறைந்து விட்டதாகவும் உணர்கிறேன்.				
8.	எனக்கு ஒரு சில உணவு வகைகளை அதிகமாக எடுத்துக் கொள்ள வேண்டுமென்ற எண்ணம் ஏற்படுகிறது. (இனிப்பு, உப்பு)				
9.	எனக்கு தூக்கத்தில் தொந்தரவு ஏற்படுகிறது . (அல்லது) நான் அதிக நேரம் தூங்குகிறேன்.				
10.	என்னால் அதிகப்படியான உணர்வுகளை (கோபம், எரிச்சல், அழுகை, மனச்சோர்வு)கட்டுப்படுத்த முடியவில்லை)				
11.	தொடும்போது மார்பகத்தில் வலியை உணர்கிறேன்.				
12.	எனக்கு தற்காலிகமாக எடை கூடுவதாக உணர்கிறேன்.				
13.	எனக்கு படிப்பதிலும், அன்றாடம் செய்யும் வேலைகளிலும் சிரமம் இருப்பதாக உணர்கிறேன்.				

பகுதி:2

அறிவுறுத்தல்: கீழ்காணும் வினாக்களை கவனமாக வாசித்து சரியான விடையை தேர்ந்தெடுத்து வட்டமிடுக.

1. வயது (வருடங்களில்)
    அ) 11
    ஆ) 12
    இ) 13
    ஈ) 14

2. மதம்
    அ) இந்து
    ஆ) இஸ்லாமியர்
    இ) கிறித்துவர்

3. குடும்பத்தின் வகை
    அ) தனிக் குடும்பம்
    ஆ) கூட்டுக் குடும்பம்

4. குடும்ப மாத வருமானம் (ரூபாய்களில்)
    அ) < 5, 000
    ஆ) 5,001- 10, 000
    இ) 10, 001 – 15, 000
    ஈ) > 15, 000

5. வசிப்பிடம்
    அ) நகரம்
    ஆ) கிராமம்
    இ) சிறு நகரம்

6. உணவு முறை
    அ) சைவம்
    ஆ) அசைவம்

7. எடை (கிலோ கிராமில்)
    அ) < 30 கிலோ
    ஆ) 31-35 கிலோ
    இ) 36-40 கிலோ
    ஈ) 41-50 கிலோ
    உ) > 50 கிலோ

8. நீங்கள் வீட்டில் எத்தனையாவது குழந்தை
    அ) முதல் குழந்தை
    ஆ) இரண்டாவது குழந்தை
    இ) மூன்றாவது குழந்தை அல்லது அதற்கு மேல்

9. தாயின் கல்வித்தகுதி
    அ) முதல்நிலைக் கல்வி
    ஆ) உயர்நிலைப் பள்ளி கல்வி
    இ) மேல்நிலைப் பள்ளி கல்வி
    ஈ) பட்டதாரி மற்றும் அதற்கும் மேல்
    உ) எழுத, படிக்கத் தெரியாதவர்.

10. நீங்கள் அடிக்கடி எடுத்துக் கொள்ளும் பானம்
    அ) காபி
    ஆ) டீ
    இ) பால்
    ஈ) பழச்சாறு
    உ) பாட்டிலில் அடைக்கப்பட்ட பானங்கள்
    ஊ) ஒன்றுமில்லை

11. நீங்கள் தினமும் முறையான உடற்பயிற்சி செய்பவரா?
    அ) ஆம் (குறிப்பிடுக ----------)
    ஆ) இல்லை

12. நீங்கள் எந்த வயதில் வயதிற்கு வந்தீர்கள்?
    அ) < 12 வயது
    ஆ) > 12 வயது

13. நீங்கள் ஒரு நாளைக்கு எவ்வளவு மணி நேரம் தூங்குகிறீர்கள்?

அ) 5 மணி நேரத்திற்கும் குறைவாக

ஆ) 5-7 மணி நேரம்

இ) 8-10 மணி நேரம்

ஈ) 10 மணி நேரத்திற்கும் குறைவாக

14. மாதவிடாய் சுழற்சி காலம்

அ) 26-28 நாட்கள்

ஆ) 29-31 நாட்கள்

இ) 32-34 நாட்கள்

ஈ) 35 நாட்களுக்கு மேல்

15. எத்தனை நாட்களுக்கு உங்களுக்கு மாதவிடாய் இரத்தப் போக்கு உள்ளது?

அ) 2-4 நாட்கள்

ஆ) 5-7 நாட்கள்

இ) 8-10 நாட்கள்

16. ஒரு நாளைக்கு எத்தனை முறை பேடுகளை மாற்றுவீர்கள்?

அ) 4 முறைக்கும் குறைவாக

ஆ) 4-5 முறைகள்

இ) 5 முறைக்கும் அதிகமாக

17. உங்கள் குடும்பத்தில் யாருக்காவது மாதவிடாய் காலத்திற்கு முன் ஏற்படும் அறிகுறிகள் அதிகமாக இருந்துள்ளதா?

அ) ஆம்

ஆ) இல்லை

18. மாதவிலக்கிற்கு முன் காணப்படும் அறிகுறிகள் எத்தனை நாட்களுக்கு உங்களுக்கு நீடிக்கிறது?

அ) 1-3 நாட்கள்

ஆ) 4-6 நாட்கள்

இ) 7-10 நாட்கள்

ஈ) 10 நாட்களுக்கும் மேல்

பகுதி:3

அறிவுறுத்தல்: கீழ்காணும் அட்டவணையில் கொடுக்கப்பட்டுள்ள மாதவிடாய் காலத்திற்கு முன் ஏற்படும் அறிகுறிகளின் பட்டியலில் அதன் தீவிரத்தையும் காலத்தையும் பொறுத்து சரியான இடத்தில் (√) செய்க.

வ. எண்	மாதவிடாய் காலத்திற்கு முன் ஏற்படும் அறிகுறிகள்	எப்பொழுதும் இருப்பதில்லை (1)	அரிதாக ஏற்படும் (2)	சில நேரங்களில் (3)	அடிக்கடி (4)	எப்பொழுதும் (5)
	உடல் சார்ந்த அறிகுறிகள்:					
1.	**தொடும் போது மார்பகதில் வலி**.					
2.	**தலைவலி**.					
3.	**வயிற்றில் அசௌகரிய உணர்வு**					
4.	**மூட்டுகள் மற்றும் தசைகளில் வலி.**					
5.	**அடிவயிற்று வீக்கம்.**					
6.	**சோர்வு.**					
7.	**தலை சுற்றல்.**					
8.	**குமட்டல்**					
9.	**முகப்பரு.**					
10.	**மலச்சிக்கல்**					
11.	**இனிப்பு மற்றும் உப்பு சார்ந்த உணவுப் பண்டங்களில் அதிக நாட்டம்.**					
	உளவியல் அறிகுறிகள்.					
12.	**பதட்டம்.**					
13.	**எரிச்சல்.**					
14.	**மனம் அலைபாய்தல்.**					
15.	**கவனக் குறைவு.**					
16.	**தூக்கப் பிரச்சனைகள்**					
17.	**மன அழுத்தம்.**					
18.	**மறதி.**					
19.	**குழப்பம்.**					
20.	**அழுகை.**					

	நடத்தை சார்ந்த அறிகுறிகள்					
21.	விடாப்பிடியான எண்ணங்கள்.					
22.	எண்ணங்களை கட்டுப்படுத்திக் கொள்ள இயலாத தன்மை					
23.	குற்ற உணர்வு.					
24.	முரண்பாடான சிந்தனைகள்.					
25.	முடிவெடுப்பதில் சிரமம்.					
26.	அதிகமாக உணர்ச்சிவசப்படுதல்.					
27.	அமைதியற்ற நிலை					
28.	கட்டாயமாக ஒரு செயலை செய்ய வேண்டுமென்ற உணர்வு.					
29.	சங்கடமான உணர்வு.					
30.	சமூகம் சார்ந்த அறிகுறிகள்.					
31.	கல்வி செயல்பாடுகளில் குறுக்கீடுகளை ஏற்படுத்துவது.					
32.	நண்பர்கள்இ உடன் படிப்பவர்கள்இ மற்றும் குடும்பக்துடனான உறவில் பிரச்சனை.					
33.	சமூகத்திலிருந்து தனித்திருப்பது.					
34.	வீட்டு வேலைகள் செய்வதில் நாட்டமின்மை					
35.	பள்ளிக்கு வராமலிருப்பது					

APPENDIX-G

JACOBSON MUSCLE RELAXATION THERAPY GUIDE

Introduction:

Premenstrual syndrome is a combination of emotional, physical, psychological and behavioural disturbances that occur approximately five to eleven days before menstruation. The incidence of premenstrual syndrome is more common among adolescent girls. Studies revealed that the adolescent girls suffer from premenstrual syndrome which is markedly affect their academic performance, missing school or school absenteeism, interruption in relationship with family, friends and relatives. Jacobson muscle relaxation therapy is one of the best and most effective method to alleviate the premenstrual syndrome.

Jacobson muscle relaxation therapy

Jacobson muscle relaxation is a type of therapy that focuses on tightening and relaxing specific muscle groups in sequence. This therapy helps to relax the mind and body by progressively tensing and relaxing the group of muscles throughout the entire body.

Benefits

- Relieving anxiety
- Reducing stress
- Lowering high blood pressure
- Improve the sleep
- Reduce the muscle tension
- Improve the concentration
- An increased sense of control over moods
- Increased self esteem

Indications

- Anxiety disorders
- Phobias

- Seizure disorder
- Insomnia
- Chronic pain / Cancer pain

Contraindications

- chronic medical (or) psychological problems
- Uncontrolled hypertension (or) other cardio vascular problems
- Schizophrenia
- Severe muscle spasm
- Recent surgery
- Fracture
- Injury

Preparation of the subjects:

- ❖ Subjects were assembled in school play ground, and make them comfortable standing position.
- ❖ Instruct to close their eyes and allow the attention to focus only on the body.

Steps in Jacobson muscle relaxation therapy

For head, face and neck

- ❖ Elevate your eyebrows, hold on for five seconds, experience muscle tension in forehead then gradually relax your forehead muscle.
- ❖ Close your eye lids tightly, hold on for five seconds, experience muscle tension, then gradually relax your eye muscles.
- ❖ Elevate your cheeks with hands, hold on for five seconds, experience muscle tension, and then gradually relax your cheek muscles.
- ❖ Open your mouth as much as wider, hold on for five seconds, experience muscle tension, and then gradually relax your mouth muscles.

- Press the lips tightly together, hold on for five seconds, experience muscle tension, then gradually relax your lip muscles.
- Pull your both ears in sideward, hold on for five seconds, experience muscle tension, and then gradually relax your ear muscles. Same like ears are pulled upwards and downwards, hold on for five seconds, experience muscle tension, then gradually relax your ear muscles.
- Tilt your neck towards the left shoulder, hold on for five seconds, experience muscle tension, then gradually relax the neck muscles, the same should be repeated towards right side shoulder.
- Bend the neck downwards to the clavicle bone, hold on for five seconds and then gradually relaxed the neck muscles, same like the neck should be extended, hold on for five seconds, and then gradually relax the neck muscles.
- Take deep breath through nose then slowly exhale from your mouth repeat it for three times, and experience that, your head muscles are completely relaxed.

For middle part of the body

- Extend your hands in sideward, hold on for five seconds, experience muscle tension and gradually relax the hand muscles.
- Shrug your shoulders straight up towards the ears, hold on for five seconds, experience muscle tension and gradually relax the shoulder muscles.
- Flex your elbows and hold your shoulders with hands, hold on for five seconds, experience muscle tension and gradually relax the hand muscles.
- Bend your wrist backwards, hold on for five seconds, experience muscle tension and gradually relax the wrist muscles.

- ❖ Interlock your fingers, hold on for few seconds, experience muscle tension and gradually relax the fingers.
- ❖ Lean forward and try to touch your feet with hands, hold on for five seconds, experience muscle tension and gradually relax the back muscles.
- ❖ Lean backward, hold on for five seconds, experience muscle tension and gradually relax the back muscles.
- ❖ Lean your body towards left side, hold on for five seconds, experience muscle tension and gradually relax the muscles and repeat the same at right side.
- ❖ Keep your hands on abdomen, gently tighten your abdominal muscles through taking deep breath, hold on for five seconds, experience muscle tension and gradually relax the abdominal muscles through breath out.
- ❖ Tense your muscle around the buttocks, hold on for five seconds, experience muscle tension and gradually relax the muscles around the buttocks.
- ❖ Take deep breath through nose then slowly exhale from your mouth repeat it for three times, and experience that, your middle part of the body muscles are completely relaxed.

For lower extremities

- ❖ Extend your left leg, hold on for five seconds, experience muscle tension and gradually relax the thigh muscles and repeat the same steps in right leg.
- ❖ Flex your left knee, hold on for five seconds, experience muscle tension and gradually relax the cuff muscles and repeat the same steps in right knee.
- ❖ Maintain chair position, hold on for five seconds, experience muscle tension and slowly relax the muscles.

- Extend your left foot, hold on for five seconds, experience muscle tension and gradually relax the foot muscles, and repeat the same steps in right foot.
- Tightly flex your toes, hold on for five seconds, experience muscle tension and gradually relax the toes.
- Curl your toes under tensing the feet, hold on for five seconds, experience muscle tension and gradually relax the feet.
- Clench your toes and pressing your heels towards the ground, hold on for five seconds and gradually relax the heel muscles.
- Take deep breath through nose then slowly exhale from the mouth repeat it for three times, and experience that, their lower extremity muscles are completely relaxed.
- Finally complete the therapy by doing whole body stretch and instruct to feel the whole body muscles and mind are completely relaxed.

ஜேக்கப்சன் தசை ஓய்வுப் பயிற்சிக்கான கையேடு

முன்னுரை:

மாதவிடாய்க் காலத்திற்கு முன்னால் ஏற்படும் அறிகுறிகள் பெண்களை உடல், மனம் மற்றும் நடத்தைகளில் பெறும் விளைவுகளை ஏற்படுத்துகின்றன.பொதுவாக இந்த அறிகுறிகள் மாதவிடாய் ஏற்படுவதற்கு ஏறக்குறைய 5 அல்லது 11 நாளைக்கு முன்னாள் ஏற்படுகிறது. இந்தப் பிரச்சனை இளம் பெண்களை அதிகம் பாதிக்கிறது. இந்தப் பிரச்சனையால், அவர்களுடைய கல்வி செயல்பாடுகள் மற்றும் திறன்கள், உறவுகளில் விரிசல் மற்றும் பள்ளிக்குத் தாமதமாக வருதல் அல்லது பள்ளிக்கு வராமலிருப்பது போன்ற பிரச்சனைகள் ஏற்படுகின்றன.

ஜேக்கப்சன் தசை ஓய்வுப் பயிற்சி:

ஜேக்கப்சன் தசை ஓய்வுப் பயிற்சி என்பது உடலில் உள்ள தசைகளை இறுக்கி அவற்றை படிப்படியாக ஓய்வு பெறச்செய்வதாகும். இம்முறையானது உடல் மற்றும் மனதை ஓய்வு பெறச்செய்கிறது.

பயன்கள்:

- பதட்டத்தைக் குறைப்பதற்கு
- மன அழுத்தத்தைக் குறைப்பதற்கு
- அதிகப்படியான இரத்த அழுத்தத்தைக் குறைப்பதற்கு
- நன்றாக உறக்கம் வருவதற்கு
- தசை இறுக்கத்தைக் குறைப்பதற்கு
- கவனத்தை அதிகரிப்பதற்கு
- அதிகப்படியான உணர்ச்சிகளைக் கட்டுப்படுத்துவதற்கு (கோபம், எரிச்சல், அழுகை)
- தன்னம்பிக்கையை அதிகரிப்பதற்கு

பயிற்சியை செய்யக் கூடியவர்கள்:

- அதிகப்படியான பதட்டம் உள்ளவர்கள்
- அதிகப்படியான பயம் மற்றும் வெறுப்புணர்வு கொண்டவர்கள்
- தூக்கப் பிரச்சனைகள் உள்ளவர்கள்
- நீண்ட நாள் கடுமையான வலியினால் பாதிக்கப்பட்டவர்கள், மற்றும் புற்று நோய் வலி உள்ளவர்கள்

பயிற்சியை செய்யக் கூடாதவர்கள்:

- தீவிரமான உடல் மற்றும் மனநல பாதிப்புக்குள்ளானவர்கள்
- கட்டுப்பாடில்லாத உயர் இரத்த அழுத்தம் மற்றும் பிற இருதய நோய்கள்
- மன சிதைவு நோயினால் பாதிக்கப்பட்டவர்கள்
- தீவிரமான தசை இறுக்கம்
- சமீபத்தில் அறுவை சிகிச்சை செய்து கொண்டவர்கள்
- எலும்பு முறிவு உள்ளவர்கள்
- கடுமையான காயம் பட்டவர்கள்

ஜேக்கப்சன் தசை ஓய்வுப் பயிற்சியை செய்யும் முறைகள்:

- பயிற்சியைத் தொடங்குவதற்கு முன் மனதை அலை பாய விடாமல் அமைதியாக வைத்துக் கொள்ள வேண்டும்.
- கவனத்தை பயிற்சி செய்யும் தசைகளில் செலுத்த வேண்டும்.

தலை, முகம் மற்றும் கழுத்துப் பகுதிக்கான பயிற்சி முறை:

- புருவங்களை மேலே உயர்த்தி நெற்றி தசைகளை சுருக்கவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். நெற்றி தசைகளின் இருக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- கண்களை இருக்கமாக மூடிக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். கண் தசைகளின் இருக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- கன்ன தசைகளை கைகளைக் கொண்டு மேல் நோக்கி உயர்த்தவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். கன்ன தசைகளின் இருக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- வாயை நன்றாக திறந்து கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். வாய் தசைகளின் இருக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.

- உதடுகள் இரண்டையும் நன்றாக அழுத்திக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். உதட்டு தசைகளின் இருக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- காதுகள் இரண்டையும், பக்கவாட்டில் இழுத்துப் பிடித்துக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். காது தசைகளின் இருக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- அவ்வாறே காதுகளை மேல் நோக்கி இழுத்துப் பிடித்துக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். காது தசைகளின் இருக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும். இதே போல், காதுகளை கீழ் நோக்கி இழுத்துப் பிடித்து மேற்சொன்ன முறைகளைப் பின்பற்றவும்.
- கழுத்தை இடப்புற தோல்பட்டையை நோக்கி சாய்த்துக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். கழுத்து தசைகளின் இருக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும். இதே முறையினை வலப்புறமாக சாய்த்து செய்யவும்.
- கழுத்தை கீழ் நோக்கி வளைத்துக் கொள்ளவும். . 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். கழுத்து தசைகளின் இருக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும். இதே போல் கழுத்தைப் பின்புறமாக வளைத்து செய்யவும்.
- மூச்சை நன்றாக மூக்கு வழியாக இழுத்து, வாய் வழியாக வெளியேற்றவும். இதே போல் மூன்று முறை செய்யவும். இப்பொழுது தலை, முகம் மற்றும் கழுத்துப் பகுதியில் உள்ள தசைகள் அனைத்தும், இறுக்கங்கள் தளர்ந்து, ஓய்வு பெறுவதை நன்கு அனுபவம் செய்யுங்கள்.

உடலின் நடுப்பகுதிக்கான பயிற்சி முறைகள்:

- கைகள் இரண்டையும் பக்கவாட்டில் விரைப்பாக நீட்டிக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். கை தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- தோள்கள் இரண்டையும், காதுகளை நோக்கி உயர்த்தவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். தோள் தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- முழங்கைகளை மடக்கி தோள்ப்பட்டையின் மீது வைத்துக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். தோள் தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- மணிக்கட்டுகளை கீழ் நோக்கி வளைத்துக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். மணிக்கட்டு தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- கை விரல்கள் அனைத்தையும் ஒன்றாகக் கோர்த்துக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். கை விரல் தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- உடலைப் பின்னோக்கி வளைத்துக் கொள்ளவும், 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். முதுகு மற்றும் உடலின் நடுப்பகுதி தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- உடலை வளைத்து, கீழ் நோக்கிப் பாதத்தை நோக்கிக் குனியவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். முதுகு மற்றும் உடலின் நடுப்பகுதி தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.

- உடலைப் பக்கவாட்டில் இடப்புறமாக வளைத்துக் கொள்ளவும் 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். உடலின் பக்கவாட்டு தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும். இதே முறையினை வலப்புறமாக வளைத்து செய்யவும்.
- கைகளை வயிற்றுப் பகுதியின் மீது வைத்துக் கொள்ளவும். நன்றாக மூச்சை உள்ளே இழுத்து, வயிற்று தசைகளை இறுக்கிக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். வயிற்றுத் தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மூச்சை வெளியேற்றி, படிப்படியாக வயிற்றுத் தசைகளை ஓய்வு பெறச்செய்யவும்.
- பிட்டப் பகுதியில் உள்ள தசைகளை நன்றாக இறுக்கிக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். பிட்டப் பகுதி தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- மூச்சை நன்றாக மூக்கு வழியாக இழுத்து, வாய் வழியாக வெளியேற்றவும். இதே போல் மூன்று முறை செய்யவும். இப்பொழுது உடலின் நடுப் பகுதியில் உள்ள தசைகள் அனைத்தும், இறுக்கங்கள் தளர்ந்து, ஓய்வு பெறுவதை நன்கு அனுபவம் செய்யுங்கள்.

உடலின் கீழ்ப்பகுதிக்கான பயிற்சி முறைகள்:

- இடதுபக்கக் காலை மேல் நோக்கி உயர்த்தவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். தொடைப் பகுதி தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும். இதே முறையினை வலப்பக்க காலை உயர்த்தி செய்யவும்.
- இடது பக்க முட்டியை வளைத்துப் பிடித்துக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். முட்டிப் பகுதியில் உள்ள தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு

பெறச்செய்யவும். இதே முறையினை வலப்பக்க முட்டியை வளைத்து செய்யவும்.

- கால்களை மடக்கி நாற்காலி நிலையில் இருக்கவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். உடலின் கீழ்ப்பகுதி தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- இடது பக்கப் பாதத்தை முன்னோக்கி நீட்டவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். பாதத்தில் உள்ள தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும். இதே முறையினை வலப்பக்கப் பாதத்தை வளைத்து செய்யவும்.
- பாத விரல்களை நன்றாக மடக்கிக் கொள்ளவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். பாத விரல் தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- பாத விரல்களை கீழே ஊன்றி நிற்கவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- பாத விரல்களை மடக்கி, குதிகாலைத் தரையில் ஊன்றி நிற்கவும். 5 நொடிகள் அந்நிலையிலேயே இருக்கவும். தசைகளின் இறுக்கத்தை நன்கு உணரவும். பிறகு மெதுவாக மற்றும் படிப்படியாக தசைகளை ஓய்வு பெறச்செய்யவும்.
- மூச்சை நன்றாக மூக்கு வழியாக இழுத்து, வாய் வழியாக வெளியேற்றவும். இதே போல் மூன்று முறை செய்யவும். இப்பொழுது உடலின் கீழ்ப் பகுதியில் உள்ள தசைகள் அனைத்தும், இறுக்கங்கள் தளர்ந்து, ஓய்வு பெறுவதை நன்கு அனுபவம் செய்யுங்கள்.
- பயிற்சியின் இறுதியாக, கைகள் இரண்டையும் கோர்த்து மேல் நோக்கி உயர்த்தி, முழு உடலையும் உயர்த்தவும். உடலின் உள்ள தசைகள் அனைத்தும், இறுக்கங்கள் தளர்ந்து, ஓய்வு பெறுவதை நன்கு அனுபவம் செய்யுங்கள்.

APPENDIX-H

PHOTO GALLERY